



STIC Search Report

EIC 1700

STIC Database Tracking Number: 168958

TO: Camie Thompson
Location: REM 10D28
Art Unit : 1774
October 24, 2005

Case Serial Number: 10/801546

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes

Formulas 1 and 101 only yielded the inventor. L22 or the first search are compounds closely related to Formula 101.

There were no results that included the pyrene derivatives or the tris hydroxyquinoline aluminum complexes with either Formulas 1 or 101. Included in the printout are the pyrene and aluminum complexes that have used in electroluminescent devices or oleds, etc.

*chrysene & pyrene
and diamine
derivatives*

**6747287 - possible 102(e)
if n=4*

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carnie Thompson Examiner #: 79244 Date: 10/14/05
 Art Unit: 1774 Phone Number 571-272-1530 Serial Number: 10/801, 340
 Mail Box and Bldg/Room Location: Perm 10028 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Fluorescent Material, organic electroluminescent element
 Inventors (please provide full names): Wataru Satozama

Earliest Priority Filing Date: 8/29/03

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please do a search on claims 1-36.

Thanks.

SCIENTIFIC REFERENCE BR
 Sci & Tech Inf. Cntr.

OCT 19 2005

Pat. & T.M. Office

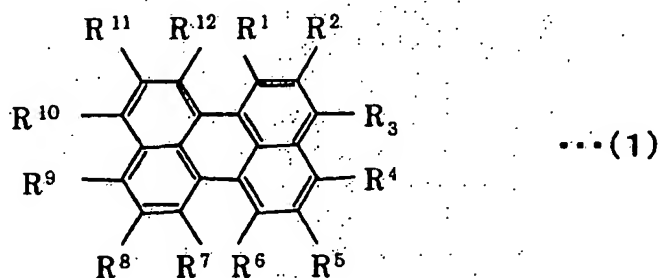
STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>JSF</u>	NA Sequence (#) _____	STN <u>\$ 1753.29</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>4</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>10/24/05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>480</u>	Other _____	Other (specify) _____

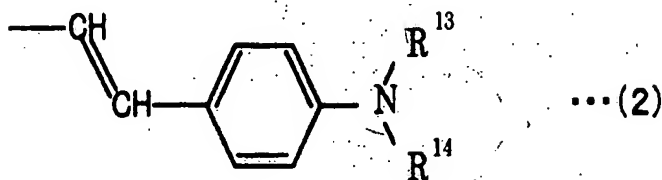
Listing of Claims

The following listing of claims replaces all prior versions and listings of claims in the application.

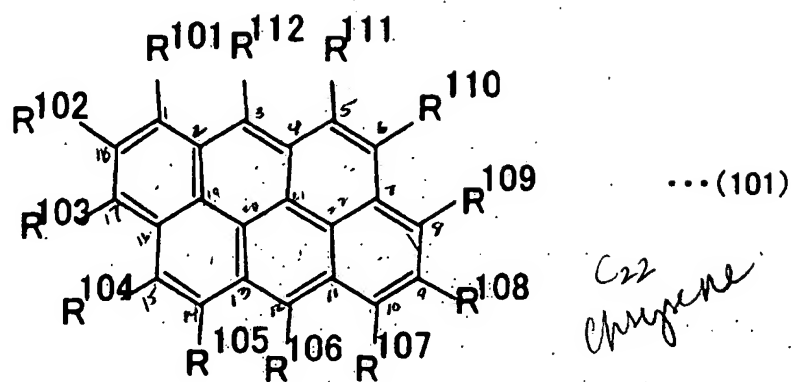
1. (Original): A fluorescent material comprising either one or both of a perylene compound represented by formula (1) below and an anthanthrene compound represented by formula (101) below:



(in formula (1), two or more of R¹⁻¹², each, have a structure represented by formula (2) below, with the rest being hydrogen),



(in formula (2), R¹³ and R¹⁴ are, independently from each other, an aromatic group that may be substituted, or an aliphatic group that may be substituted, wherein R¹³ and R¹⁴ may be bonded with each other, directly or via a bonding group), and



(in formula (101), four or more of R¹⁰¹⁻¹¹², each, have a structure represented by formula (102) below, with the rest being hydrogen),



(in formula (102), R¹¹³ and R¹¹⁴ are, independently from each other, an aromatic group that may be substituted, or an aliphatic group that may be substituted, wherein R¹¹³ and R¹¹⁴ may be bonded with each other, directly or via a bonding group).

2. (Original): A fluorescent material according to claim 1, wherein two of said R¹⁻¹² has a structure represented by formula (2), with the rest being hydrogen.

3. (Original): A fluorescent material according to claim 2, wherein four of said R¹⁰¹⁻¹¹², each, have a structure represented by formula (102), with the rest being hydrogen.

4. (Original): A fluorescent material according claim 3, wherein said R^{13} and R^{14} are, independently from each other, a phenyl or naphthyl group that may be substituted.

5. (Original): A fluorescent material according to claim 4, wherein said phenyl group or naphthyl group has a substituent group selected from the class consisting of an alkyl group, an aryl group, an alkoxy group, an aryloxy group, a dialkylamino group and a diarylamino group, and the substituent group may also be substituted.

6. (Original): A fluorescent material according to claim 4, wherein said R^{13} and R^{14} are, independently from each other, a phenyl or naphthyl group that may be substituted.

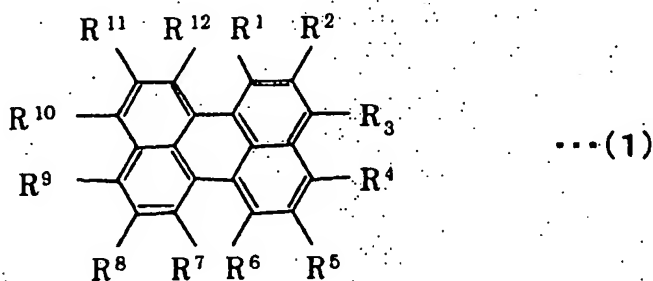
7. (Original): A fluorescent material according to claim 6, wherein said phenyl group or naphthyl group has a substituent group selected from the class consisting of an alkyl group, an aryl group, an alkoxy group, an aryloxy group, a dialkylamino group and a diarylamino group, and the substituent group may also be substituted.

8. (Original): A fluorescent material according to claim 6 for use as an organic light-emitting layer forming material for an organic electroluminescent element.

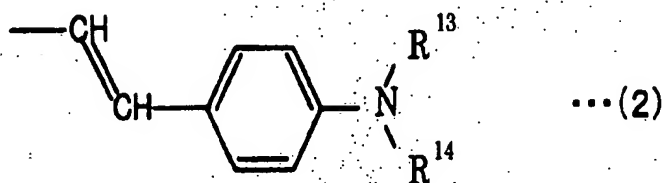
9. (Original): A fluorescent material according to claim 8 for use as an organic light-emitting layer forming material in the capacity of a host or a guest for an organic electroluminescent element.

10. (Original): An organic electroluminescent element having an organic light-emitting layer between an anode and a cathode, said organic light-emitting layer comprising a fluorescent material according to one of claims 1 to 7.

11. (Original): An organic electroluminescent element having an organic light-emitting layer between an anode and a cathode, said organic light-emitting layer using a perylene compound represented by formula (1) below as a fluorescent material:



(in formula (1), two of R^{1-12} , each, have a structure represented by formula (2) below, with the rest being hydrogen),

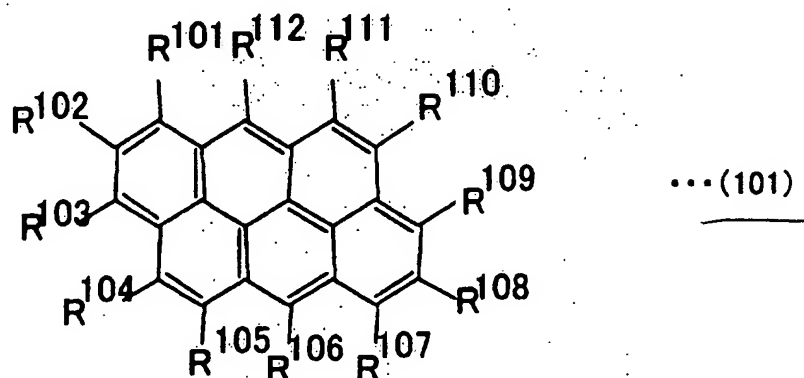


(in formula (2), R^{13} and R^{14} are, independently from each other, an aromatic group that may be substituted, or an aliphatic group that may be substituted, wherein R^{13} and R^{14} may be bonded with each other, directly or via a bonding group).

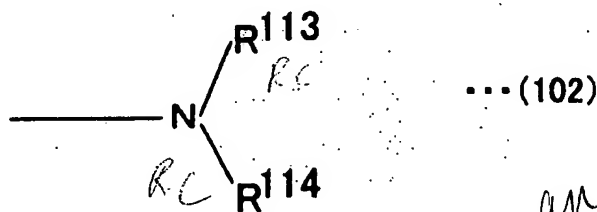
12. (Original): An organic electroluminescent element according to claim 11, wherein said R^{13} and R^{14} are, independently from each other, a phenyl or naphthyl group that may be substituted.

13. (Original): An organic electroluminescent element according to claim 12, wherein, said phenyl group or naphthyl group has a substituent group selected from the class consisting of an alkyl group, an aryl group, an alkoxy group, an aryloxy group, a dialkylamino group and a diarylamino group, and the substituent group may also be substituted.

14. (Original): An organic electroluminescent element having an organic light-emitting layer between an anode and a cathode, said organic light-emitting layer using an anthanthrene compound represented by formula (101) below as a fluorescent material:



(in formula (101), four of $R^{101-112}$, each, have a structure represented by formula (102) below, with the rest being hydrogen),



an aromatic group

(in formula (102), R^{113} and R^{114} are, independently from each other, an aromatic group that may be substituted, or an aliphatic group that may be substituted, wherein R^{113} and R^{114} may be bonded with each other, directly or via a bonding group).

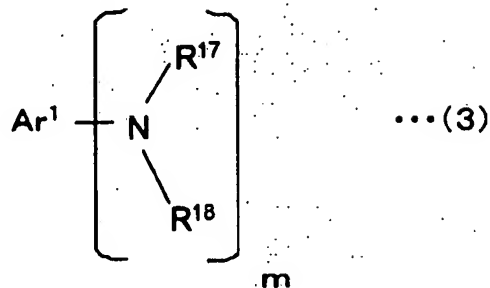
15. (Original): An organic electroluminescent element according to claim 14, wherein said R^{113} and R^{114} are, independently from each other, a phenyl or naphthyl group that may be substituted.

16. (Original): An organic electroluminescent element according to claim 15, wherein said phenyl group or naphthyl group has a substituent group selected from the class consisting of an alkyl group, an aryl group, an alkoxy group, an aryloxy group, a dialkylamino group and a diarylamino group, and the substituent group may also be substituted.

17. (Original): An organic electroluminescent element according to claim 10, wherein said fluorescent material is an organic light-emitting layer forming material in the capacity of a host or a guest.

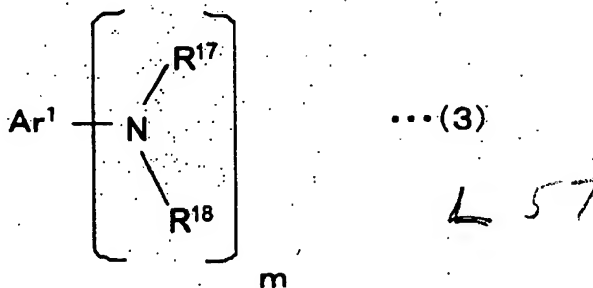
18. (Original): An organic electroluminescent element according to one of claims 11 to 16, wherein said fluorescent material is an organic light-emitting layer forming material in the capacity of a host or a guest.

19. (Original): An organic electroluminescent element according to claim 10, wherein said organic light-emitting layer comprises a mixture of said fluorescent material and an aromatic amine compound represented by formula (3) below as an organic light-emitting layer forming material:



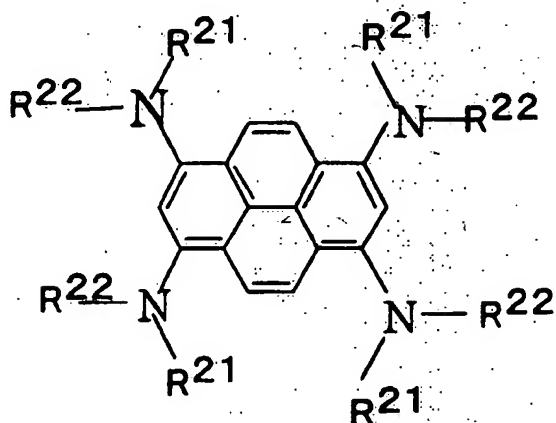
(in formula (102), R^{113} and R^{114} are, independently from each other, an aromatic group that may be substituted, or an aliphatic group that may be substituted, wherein R^{113} and R^{114} may be bonded with each other, directly or via a bonding group).

20. (Currently amended); An organic electroluminescent element according to one of claims 11 to [[17]] 16, wherein said organic light-emitting layer comprises a mixture of said fluorescent material and an aromatic amine compound represented by formula (3) below as an organic light-emitting layer forming material:



(wherein Ar^1 is an aromatic group with a bonding valency of 2, 3 or 4 that may be substituted; R^{17} and R^{18} are, independently from each other, a monovalent aromatic group that may be substituted; and m is an integer of 2-4).

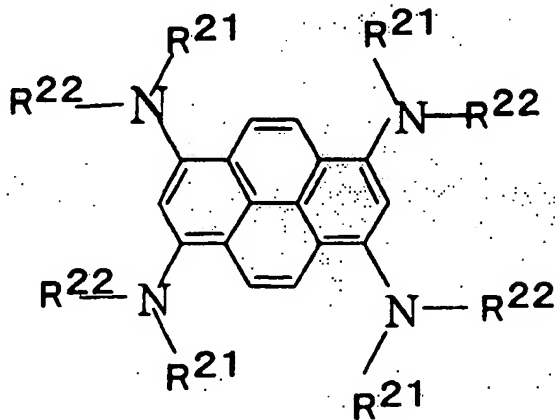
21. (Original): An organic electroluminescent element according to claim 19, wherein said aromatic amine compound represented by formula (3) is a tetra(diarylamino)-substituted pyrene represented by formula (4) below:



... (4)

(wherein R²¹ and R²² are, independently from each other, a monovalent aromatic group).

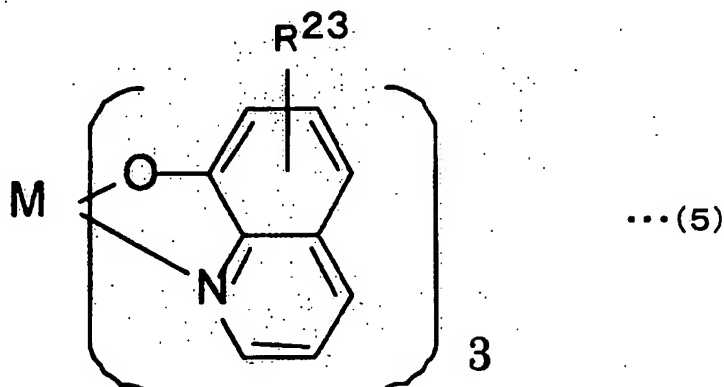
22. (Original): An organic electroluminescent element according to claim 20, wherein said aromatic amine compound represented by formula (3) is a tetra(diarylamino)-substituted pyrene represented by formula (4) below:



... (4)

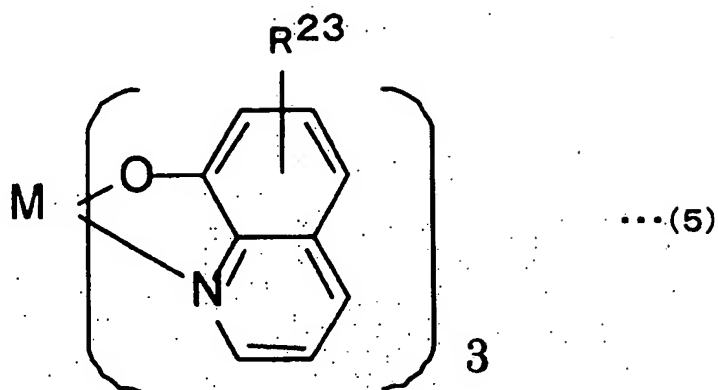
(wherein R^{21} and R^{22} are, independently from each other, a monovalent aromatic group).

23. (Original): An organic electroluminescent element according to claim 10, wherein said organic light-emitting layer comprises, as an organic light-emitting layer forming material, a mixture of said fluorescent material and a hydroxyquinoline complex represented by formula (5) below:



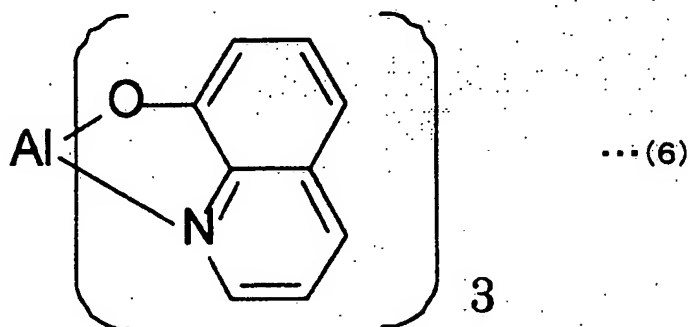
(wherein R^{23} is hydrogen or an alkyl group that may be substituted; and M is a metal having a valency of 3).

24. (Currently Amended): An organic electroluminescent element according to one of claims 11-[[17]] 16, wherein said organic light-emitting layer comprises, as an organic light-emitting layer forming material, a mixture of said fluorescent material and a hydroxyquinoline complex represented by formula (5) below:

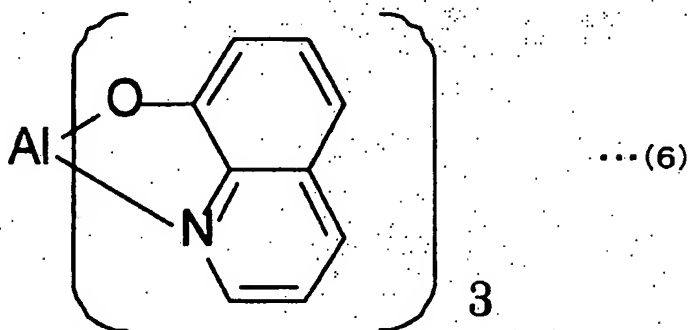


(wherein R²³ is hydrogen or an alkyl group that may be substituted; and M is a metal having a valency of 3).

25. (Original): An organic electroluminescent element according to claim 23, wherein said hydroxyquinoline complex is an aluminum hydroxyquinoline complex represented by formula (6) below:



26. (Original): An organic electroluminescent element according to claim 24, wherein said hydroxyquinoline complex is an aluminum hydroxyquinoline complex represented by formula (6) below:



27. (Original): An organic electroluminescent element according to claim 10, wherein said organic light-emitting layer consists of a single layer of a fluorescent material.

28. (Original): An organic electroluminescent element according to one of claims 11 to 16, wherein said organic light-emitting layer consists of a single layer of a fluorescent material.

29. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 10.

30. (Currently amended): An organic electroluminescent display using an organic electroluminescent element according to one of claims 11 to ~~17, 19, 21, 23, 25 and 27~~ 16.

31. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 18.

32. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 20.

33. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 22.

34. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 24.

35. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 26.

36. (Original): An organic electroluminescent display using an organic electroluminescent element according to claim 28.

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(FILE 'HOME' ENTERED AT 14:42:55 ON 21 OCT 2005)

FILE 'HCAPLUS' ENTERED AT 14:43:36 ON 21 OCT 2005

L1 E US20050048313/PN
1 S US20050048313/PN
SEL L1 RN

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L2 17 S E1-E17

FILE 'LREGISTRY' ENTERED AT 16:14:33 ON 21 OCT 2005

L3 STR 85514-20-1

FILE 'REGISTRY' ENTERED AT 16:15:09 ON 21 OCT 2005

L4 1 S L3
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L5 STR L3

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L6 46 S L5

FILE 'LREGISTRY' ENTERED AT 16:18:50 ON 21 OCT 2005

L7 STR L5

FILE 'REGISTRY' ENTERED AT 16:19:11 ON 21 OCT 2005

L8 50 S L7
E 6828.2/RID
E 6828/RID

FILE 'LREGISTRY' ENTERED AT 16:21:50 ON 21 OCT 2005

L9 STR 845896-96-0

FILE 'REGISTRY' ENTERED AT 16:23:16 ON 21 OCT 2005

L10 42 S L9

FILE 'LREGISTRY' ENTERED AT 16:23:45 ON 21 OCT 2005

L11 STR L9

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L12 4 S L11
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E 8241.1/RID
E 8241/RID

L13 100 S 8241.1.4/RID

L14 11 S L13 AND 1<N

L15 3 S L14 AND 3<N

L16 3 S L14 AND L2

L17 4 S L13 AND L2

L18 3 S L15 AND L16 AND L17

L19 8 S L14 NOT L18

FILE 'HCAPLUS' ENTERED AT 16:44:13 ON 21 OCT 2005

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 L21 9 S L14
 L22 8 S L21 NOT L20

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 620-93-9/BI OR 845896-91-5/BI OR 845896-92-6/BI OR
 845896-93-7/BI OR 845896-94-8/BI OR 845896-96-0/BI OR
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L20 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:182182 HCAPLUS
 DOCUMENT NUMBER: 142:268913
 TITLE: Fluorescent material, organic
 electroluminescent element and organic
 electroluminescent display
 INVENTOR(S): Sotoyama, Wataru
 PATENT ASSIGNEE(S): Fujitsu Limited, Japan
 SOURCE: U.S. Pat. Appl. Publ., 25 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2005048313	A1	20050303	<u>US 2004-801546</u>	2004 0317
JP 2005075868	A2	20050324	JP 2003-305621	2003 0829
PRIORITY APPLN. INFO.:			JP 2003-305621	A 2003 0829

OTHER SOURCE(S): MARPAT 142:268913
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

AB The invention refers to an organic electroluminescent element having an organic light-emitting layer between an anode and a cathode, wherein the organic light-emitting layer comprises, as an organic light-emitting layer forming material, a fluorescent material comprising a perylene compound I [R1-12 = H or -CH:CH-Ph-N(R13)R14, wherein two or more are not H; R13,14 = (un)substituted aromatic or aliphatic and may be bonded to each other] and/or an anthanthrene compound II [R101-112 = H or N(R113)R114, wherein 4 or more are not H; R113,114 = (un)substituted aromatic or aliphatic and may be bonded to each other]. A fluorescent material that emits red light with a high color purity and a high luminous efficiency-when used singly or as a guest, an organic EL element having a high luminous efficiency, and a high-performance organic EL display having a high luminous efficiency are realized.

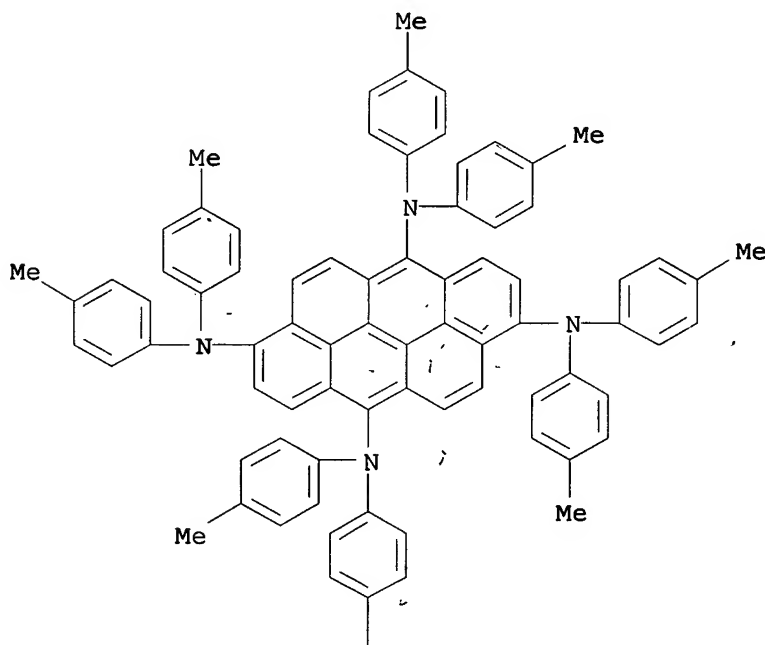
IT 845896-94-8P 845896-97-1P 845896-98-2P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fluorescent material, organic electroluminescent element and organic electroluminescent display using perylene and anthanthrene derivs.)

RN 845896-94-8 HCAPLUS

CN Dibenzo[def,mno]chrysene-3,6,9,12-tetramine,
N,N,N',N',N'',N'',N''',N'''-octakis(4-methylphenyl)- (9CI) (CA
INDEX NAME)

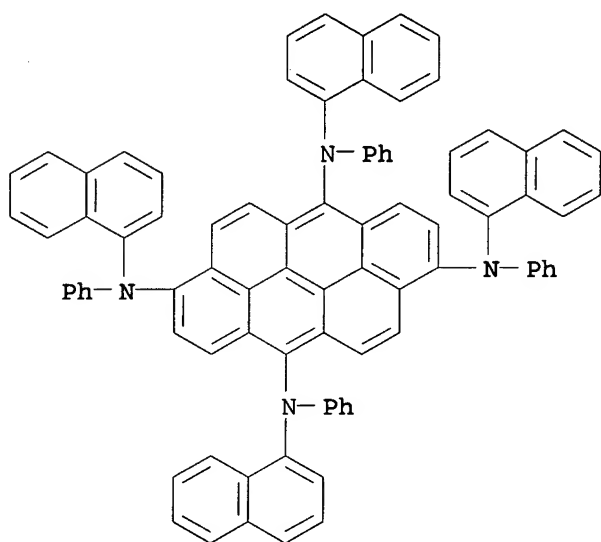
PAGE 1-A



PAGE 2-A

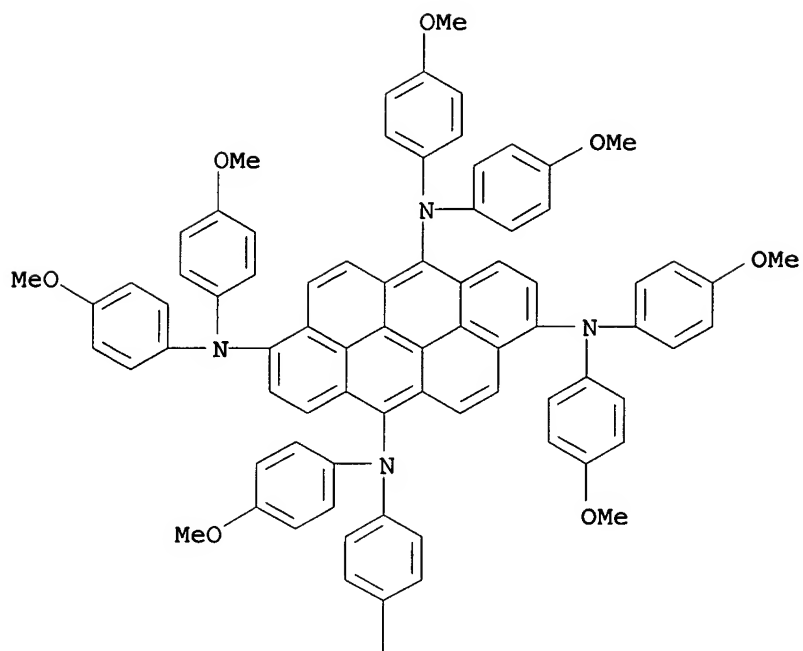
Me

RN 845896-97-1 HCAPLUS
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RN 845896-98-2 HCAPLUS
 CN Dibenzo[def,mno]chrysene-3,6,9,12-tetramine, N,N,N',N',N'',N'',N''',N'''-octakis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

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 OMe

IC ICM H05B033-14
 ICS C09K011-06
 INCL 428690000; 428917000; 313504000; 313506000; 252301160
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74
 IT 845896-91-5P 845896-93-7P **845896-94-8P**
845896-97-1P 845896-98-2P 845896-99-3P
 845897-00-9P
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (fluorescent material, organic electroluminescent element and organic electroluminescent display using perylene and anthanthrene derivs.)

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L2 17 SEA FILE=REGISTRY ABB=ON PLU=ON (101-70-2/BI OR
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 620-93-9/BI OR 845896-91-5/BI OR 845896-92-6/BI OR

845896-93-7/BI OR 845896-94-8/BI OR 845896-96-0/BI OR
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 845897-00-9/BI OR 845897-01-0/BI OR 85514-20-1/BI OR
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 L16 3 SEA FILE=REGISTRY ABB=ON PLU=ON L14 AND L2
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 L18 3 SEA FILE=REGISTRY ABB=ON PLU=ON L15 AND L16 AND L17
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 L22 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 NOT L20

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L22 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:317922 HCAPLUS

DOCUMENT NUMBER: 138:347368

TITLE: High electron-mobility and high
 ON/OFF-current-ratio organic thin-film
 transistors

INVENTOR(S): Higashiguchi, Itaru; Oda, Atsushi; Ishikawa,
 Hitoshi

PATENT ASSIGNEE(S): NEC Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 77 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

possible

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003124472	A2	20030425	JP 2001-320342	2001 1018
US 6747287	B1	20040608	US 2002-272962	2002 1017
CN 1412864	A	20030423	CN 2002-147242	2002 1018
PRIORITY APPLN. INFO.: <i>102e)</i>			JP 2001-320342	A 2001 1018

AB The title organic TFTs contain X[NAr1Ar2]_n {Ar1, Ar2 = C6-20
 (substd.) aromatic-hydrocarbon or aromatic heterocyclic group, wherein
 Ar1 and Ar2 may be bonded together to form a ring each other; X = 1-4
 valent (substd.) C6-34 condensed aromatic hydrocarbon group compound}.
 The organic compds. give TFTs high electron mobility and high
 ON/OFF-current-ratio.

IT 515833-70-2 515833-91-7 515834-11-4

Les Henderson

Page 6

*wherein
 X=1-4*

*X = C6-C34 substituted
 aromatic
 hydrocarbon
 includes
 chrysene*

571-272-2538

515834-32-9

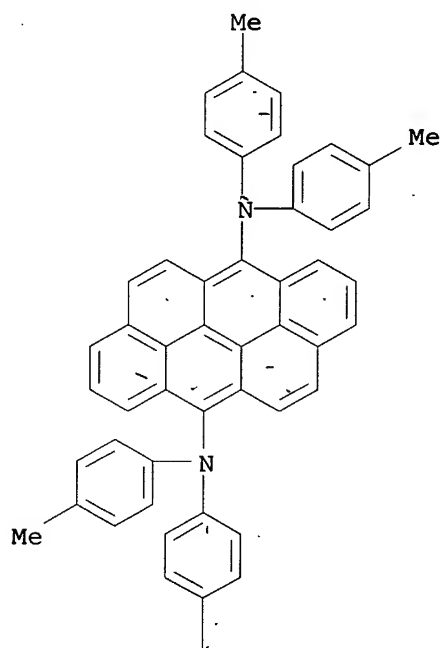
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(high electron-mobility and high ON/OFF-current-ratio organic aromatic-heterocyclic compound thin-film transistors)

RN 515833-70-2 HCAPLUS

CN Dibenzo[def,mno]chrysene-6,12-diamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



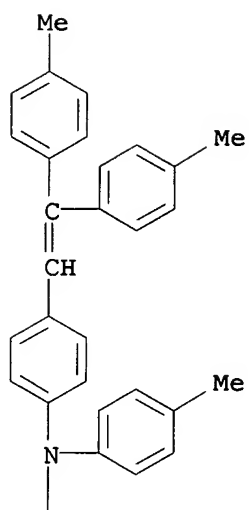
PAGE 2-A

Me

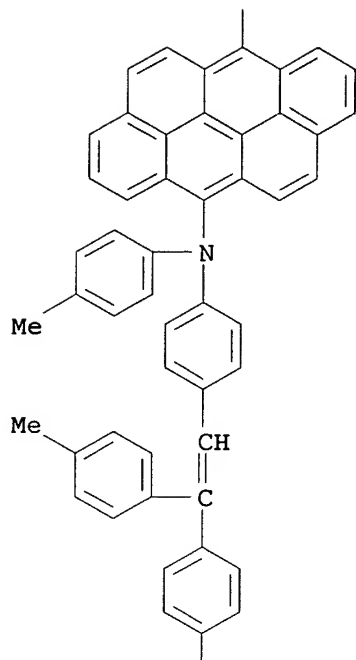
RN 515833-91-7 HCAPLUS

CN Dibenzo[def,mno]chrysene-6,12-diamine, N,N'-bis[4-[2,2-bis(4-methylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

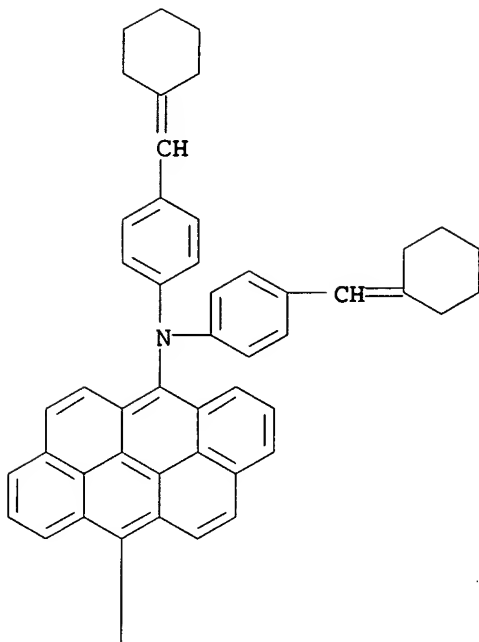


PAGE 3-A

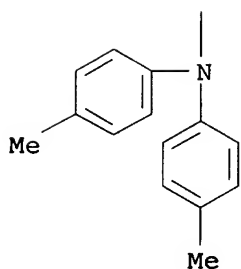


RN 515834-11-4 HCAPLUS
CN Dibenzo[def,mno]chrysene-6,12-diamine, N,N-bis[4-(cyclohexylidenemethyl)phenyl]-N',N'-bis(4-methylphenyl)- (9CI)
(CA INDEX NAME)

PAGE 1-A

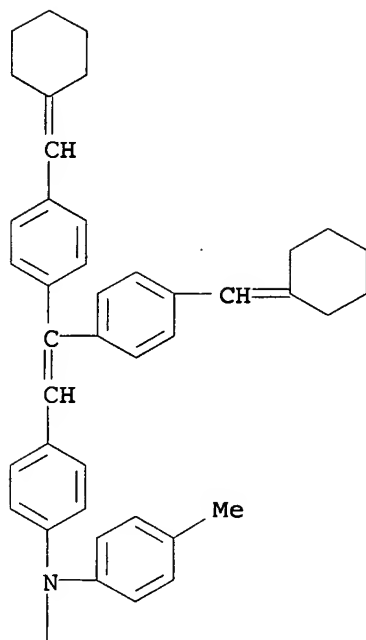


PAGE 2-A

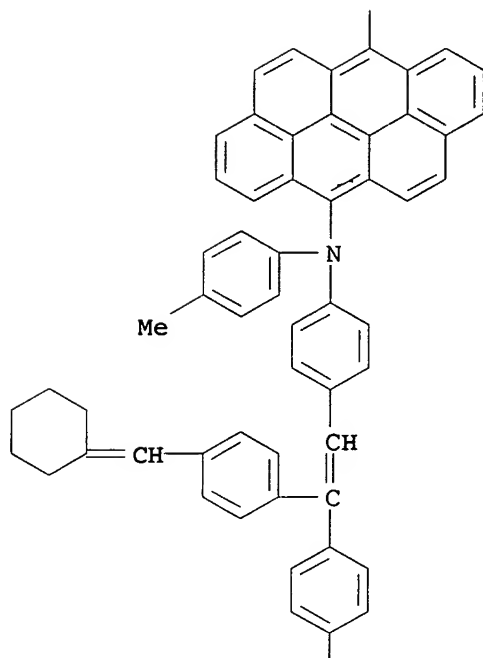


RN 515834-32-9 HCAPLUS
CN Dibenzo[def,mno]chrysene-6,12-diamine, N,N'-bis[4-[2,2-bis[4-(cyclohexylidenemethyl)phenyl]ethenyl]phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

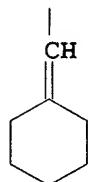
PAGE 1-A



PAGE 2-A



PAGE 3-A



IC ICM H01L029-786
 ICS H01L029-80; H01L051-00
 CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 25, 27, 28
 IT 148077-52-5 177799-16-5 178562-07-7 227010-23-3
 243847-56-5 252646-51-8 259220-14-9 278174-16-6
 345658-49-3 345658-55-1 384343-74-2 384343-78-6
 394656-41-8 426218-15-7 426218-23-7 426218-25-9
 426218-28-2 426218-33-9 426218-35-1 515832-99-2
 515833-00-8 515833-01-9 515833-02-0 515833-03-1
 515833-04-2 515833-05-3 515833-06-4 515833-07-5
 515833-08-6 515833-09-7 515833-10-0 515833-11-1
 515833-12-2 515833-13-3 515833-14-4 515833-15-5
 515833-16-6 515833-17-7 515833-18-8 515833-19-9
 515833-20-2 515833-21-3 515833-22-4 515833-23-5

515833-24-6	515833-25-7	515833-26-8	515833-27-9
515833-28-0	515833-29-1	515833-30-4	515833-31-5
515833-32-6	515833-33-7	515833-34-8	515833-35-9
515833-36-0	515833-37-1	515833-38-2	515833-39-3
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515833-44-0	515833-45-1	515833-46-2	515833-47-3
515833-48-4	515833-49-5	515833-50-8	515833-51-9
515833-52-0	515833-53-1	515833-54-2	515833-55-3
515833-56-4	515833-57-5	515833-58-6	515833-59-7
515833-60-0	515833-61-1	515833-62-2	515833-63-3
515833-64-4	515833-65-5	515833-66-6	515833-67-7
515833-68-8	515833-69-9	515833-70-2	515833-71-3
515833-72-4	515833-73-5	515833-74-6	515833-75-7
515833-76-8	515833-77-9	515833-78-0	515833-79-1
515833-80-4	515833-81-5	515833-82-6	515833-83-7
515833-84-8	515833-85-9	515833-86-0	515833-87-1
515833-88-2	515833-89-3	515833-90-6	515833-91-7
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515834-00-1	515834-01-2	515834-02-3	515834-03-4
515834-04-5	515834-05-6	515834-06-7	515834-07-8
515834-08-9	515834-09-0	515834-10-3	515834-11-4
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515834-40-9	515834-41-0	515834-42-1	515834-43-2
515834-44-3	515834-45-4	515834-46-5	515834-47-6
515834-49-8	515834-51-2	515834-53-4	515834-55-6
515834-57-8	515834-59-0	515834-61-4	515834-63-6
515834-65-8	515834-67-0	515834-70-5	515834-72-7
515834-73-8	515834-75-0	515834-79-4	515834-81-8
515834-82-9	515834-83-0	515834-84-1	

RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(high electron-mobility and high ON/OFF-current-ratio organic aromatic-heterocyclic compound thin-film transistors)

L22 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:434358 HCAPLUS

DOCUMENT NUMBER: 125:126623

TITLE: Far-infrared emission of PAH molecules (14-40 μm): a preparation for ISO spectroscopy

AUTHOR(S): Moutou, C.; Leger, A.; d'Hendecourt, L.

CORPORATE SOURCE: Institut d'Astrophysique Spatiale, Universite Paris Sud, Orsay, F-91405, Fr.

SOURCE: Astronomy and Astrophysics (1996), 310(1), 297-308

CODEN: AAEJAF; ISSN: 0004-6361

PUBLISHER: Springer

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors study the absorption spectra of 40 PAH mols.

(Polycyclic Aromatic Hydrocarbons) in solid matrixes, in the almost unexplored 14-75 μm range. Some accumulations of features appear among the whole sample of laboratory spectra and indicate the most probable positions of interstellar bands. After calcn. of the IR emission provided by a family of PAHs ranging from 3 to 70 Å size, it comes out that four bands are dominating and could be detected by the future IR observatory ISO, if the species involved are present at an abundance that the authors define. Their positions are 16.2, 18.2, 21.2 and 23.1 μm .

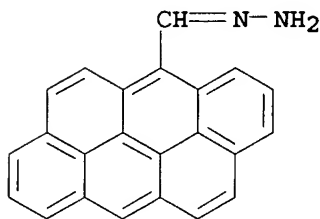
IT 179414-70-1

RL: GFM (Geological or astronomical formation); GOC (Geological or astronomical occurrence); GPR (Geological or astronomical process); PRP (Properties); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)

(far-IR emission of PAH mols. (14-40 μm): a preparation for ISO spectroscopy)

RN 179414-70-1 HCAPLUS

CN Dibenzo[def,mno]chrysene-6-carboxaldehyde, hydrazone (9CI) (CA INDEX NAME)



CC 73-9 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 85-01-8, Phenanthrene, properties 129-00-0, Pyrene, properties 188-94-3, Diindeno[1,2,3-cd:1',2',3'-lm]perylene 188-96-5, Dibenzo[cd,lm]perylene 190-24-9, Hexabenzo[bc,ef,hi,kl,no,qr]coronene 190-26-1, Ovalene 190-66-9, Dibenzo[a,g]coronene 190-70-5, Benzo[a]coronene 190-74-9, Naphtho[2,3-a]coronene 190-90-9 190-95-4, Dibenzo[b,pqr]perylene 191-07-1, Coronene 191-48-0, Diacenaphtho[1,2-j:1',2'-l]fluoranthene 196-02-1, Dibenzo[fg,uv]heptacene 197-69-3, Dibenzo[fg,ij]pentaphene 197-74-0, Dibenzo[fg,qr]pentacene 198-55-0, Perylene 206-44-0, Fluoranthene 517-51-1 610-48-0 779-02-2 5869-30-7, Dibenzo[b,ghi]perylene 14147-38-7, Dibenzo[de,st]pentacene 15570-45-3 17088-22-1 18801-00-8 41163-25-1 53086-28-5 54811-28-8 80277-99-2 88299-48-3 120835-83-8, Benzo[de]naphtho[2,1,8,7-qrst]pentacene 122645-04-9 179414-65-4 179414-67-6 179414-68-7, Ovaleno[3,4-c]furan-9,11-dione 179414-69-8, Dibenzo[bc,ef]coronene-7,14-dione 179414-70-1 179414-71-2, Benzo[h]hexaphene-1,4,16(15a)-trione

RL: GFM (Geological or astronomical formation); GOC (Geological or astronomical occurrence); GPR (Geological or astronomical process); PRP (Properties); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)

(far-IR emission of PAH mols. (14-40 μm): a preparation for ISO

spectroscopy)

L22 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1972:105910 HCAPLUS

DOCUMENT NUMBER: 76:105910

TITLE: Vibrational studies of aromatic
hydrocarbon-trinitrobenzene charge-transfer
complexes

AUTHOR(S): Larkindale, J. P.; Simkin, D. J.

CORPORATE SOURCE: Chem. Dep., McGill Univ., Montreal, QC, Can.

SOURCE: Spectrochimica Acta, Part A: Molecular and
Biomolecular Spectroscopy (1972), 28(3),
485-91

CODEN: SAMCAS; ISSN: 1386-1425

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A vibrational study of aromatic hydrocarbon-trinitrobenzene
charge-transfer complexes was carried out to investigate changes
due to complexation. Small frequency shifts were observed in solid
phase spectra, but not in solution studies. An explanation of the
exptl. data is offered.

IT 34892-84-7

RL: PRP (Properties)
(vibrational spectrum of)

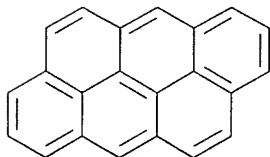
RN 34892-84-7 HCAPLUS

CN Dibenzo[def,mno]chrysene, compd. with 1,3,5-trinitrobenzene (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 191-26-4

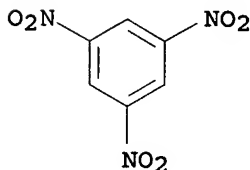
CMF C22 H12



CM 2

CRN 99-35-4

CMF C6 H3 N3 O6



CC 73 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

IT 980-80-3 1700-13-6 1787-27-5 15251-37-3 34892-82-5

34892-84-7 34892-85-8 34892-86-9

RL: PRP (Properties)

(vibrational spectrum of)

L22 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1964:410876 HCAPLUS

DOCUMENT NUMBER: 61:10876

ORIGINAL REFERENCE NO.: 61:1731f-h

TITLE: The charge-transfer interaction in solid molecular complexes

AUTHOR(S): Kuroda, H.; Yoshihara, K.; Kinoshita, M.; Akamatu, H.

CORPORATE SOURCE: Univ. Tokyo

SOURCE: Proc. Intern. Symp. Mol. Struct. Spectry., Tokyo (1962), (D101), 4pp

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Charge-transfer (CT) complexes are classified into (1) those with weak interaction e.g., of polycyclic aromatic hydrocarbons and trinitrobenzene or tetracyanoethylene, (2) those with moderate interaction e.g., of PhNMe₂ and chloranil or bromanil, (3) those with a strong interaction e.g., of I with polycyclic aroms., and (4) ionic complexes e.g., of SbCl₅ with polycyclic aroms. In 1, the CT band in the solid state is red-shifted compared to the solution band of the 1:1 complex. They do not show ESR (ESR) absorption at room temperature and are poor elec. conductors, but show photoconduction. Linear plots are obtained between the energy gap (E) and the energy of CT excitation (hvCT). In 2, the CT band of the solid complex is considerably blue-shifted compared to the solution data. It possesses appreciable conductivity but weak ESR absorption. Type 3 complexes usually show strong ESR absorption, remarkable conductivity, and very broad absorption spectra different from the solution spectra of the complexes or of the pos. donor ions. In 4, due to strong CT interaction, the solid complex contains pos. donor ions and neg. acceptor ions. It shows strong ESR absorption from which the % ionization may be calculated. The spectrum of the solid complex resembles that of the pos. donor ion in solution. For 1, $\epsilon \approx hvCT$; for 2, $\epsilon \ll hvCT$.

IT 34892-84-7, Dibenzo[def,mno]chrysene, compound with 1,3,5-trinitrobenzene (1:1) (electron transfer in)

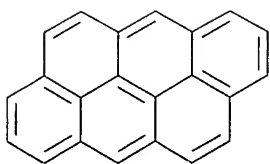
RN 34892-84-7 HCAPLUS

CN Dibenzo[def,mno]chrysene, compd. with 1,3,5-trinitrobenzene (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 191-26-4

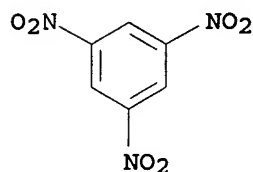
CMF C22 H12



CM 2

CRN 99-35-4

CMF C6 H3 N3 O6



CC 32 (Physical Organic Chemistry)
 IT 1223-66-1, Naphthalene, compound with ethenetetracarbonitrile (1:1)
 1223-66-1, Ethenetetetracarbonitrile, compound with naphthalene (1:1)
 1700-13-6, Anthracene, compound with 1,3,5-trinitrobenzene (1:1)
 2399-97-5, Pyrene, compound with ethenetetracarbonitrile (1:1)
 2876-91-7, Perylene, compound with ethenetetracarbonitrile (1:1)
 2876-95-1, Pyrene, compound with I2 (1:2) 2877-00-1, Perylene,
 compound with I2 (2:3) 3445-48-5, p-Benzoquinone, tetrachloro-,
 compound with N,N-dimethylaniline 6164-86-9, Pyrene, compound with
 1,3,5-trinitrobenzene (1:1) 6418-68-4, Perylene, compound with
 SbCl5 15251-37-3, Perylene, compound with 1,3,5-trinitrobenzene
 (1:1) 16636-09-2, Aniline, N,N-dimethyl-, compound with
 1,3,5-trinitrobenzene 18273-63-7, Antimony chloride, SbCl5,
 compound with phenanthrene 18273-67-1, Antimony chloride, SbCl5,
 compound with anthracene 18274-05-0, Antimony chloride, SbCl5,
 compound with phenothiazine 18274-09-4, Antimony chloride, SbCl5,
 compound with pyrene 20265-16-1, Chrysene, compound with
 1,3,5-trinitrobenzene (1:1) 22011-63-8, p-Benzoquinone,
 tetrabromo-, compound with N,N-dimethylaniline 25158-57-0,
 Phenanthrene, compound with ethenetetracarbonitrile 25724-19-0,
 Phenothiazine, compound with I2 (1:1) 29271-85-0, Phenanthrene,
 compound with 1,3,5-trinitrobenzene 34892-84-7,
 Dibenzo[def,mno]chrysene, compound with 1,3,5-trinitrobenzene (1:1)
 856610-97-4, Pyranthrene, compound with I2 (1:2)
 (electron transfer in)

L22 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1964:64994 HCAPLUS

DOCUMENT NUMBER: 60:64994

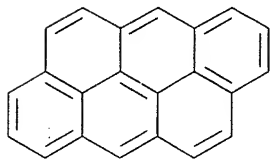
ORIGINAL REFERENCE NO.: 60:11441f-g

TITLE: X-ray powder diffraction patterns of solid
hydrocarbons, derivatives of hydrocarbons,

phenols, and organic bases
AUTHOR(S): Hofer, L. J. E.; Peebles, W. C.; Bean, E. H.
CORPORATE SOURCE: U.S. Bur. of Mines, Washington, DC
SOURCE: Bulletin - United States, Bureau of Mines
(1963), No. 613, 59 pp.
CODEN: XBMAJ; ISSN: 0082-9129
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Included are compds. of interest in research involving fuels, coal
tar dyes, plastics, pharmaceutical, agricultural chems.,
carcinogens, air pollutants, and other public health problems.
X-ray powder diffraction patterns (178) are presented of aromatic
hydrocarbons, 2,4,7-trinitro-9-fluorenone derivs. of aromatic
hydrocarbons, phenols, and organic bases for pos. identification of
solid organic compds.
IT 96674-12-3, Dibenzo[def,mno]chrysene, compound with
2,4,7-trinitrofluoren-9-one (1:1)
(x-ray diffraction pattern for)
RN 96674-12-3 HCAPLUS
CN Dibenzo[def,mno]chrysene, compd. with 2,4,7-trinitrofluoren-9-one
(1:1) (7CI) (CA INDEX NAME)

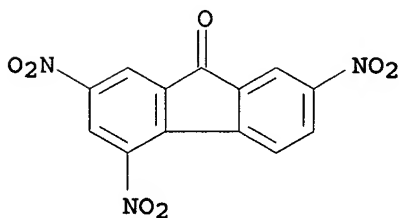
CM 1

CRN 191-26-4
CMF C22 H12



CM 2

CRN 129-79-3
CMF C13 H5 N3 O7



CC 8 (Crystallization and Crystal Structure)
IT 56-49-5, Cholanthrene, 3-methyl- 56-55-3, Benz[a]anthracene
60-09-3, C.I. Solvent Yellow 1 61-54-1, Indole,

3-(2-aminoethyl)- 66-71-7, 1,10-Phenanthroline 67-51-6,
 Pyrazole, 3,5-dimethyl- 80-46-6, Phenol, p-tert-pentyl-
 83-32-9, Acenaphthene 83-34-1, Indole, 3-methyl-(skatole)
 84-67-3, Benzidine, 2,2'-dimethyl- 85-01-8, Phenanthrene
 85-02-9, Benzo[f]quinoline 85-06-3, Benzo [f] quinoline,
 3-methyl- 86-73-7, Fluorene 86-74-8, Carbazole 87-66-1,
 Pyrogallol 89-83-8, Thymol 90-12-0, Naphthalene, 1-methyl-
 90-15-3, 1-Naphthol 90-43-7, Phenol, o-phenyl- 90-45-9,
 Acridine, 9-amino- 91-20-3, Naphthalene 91-57-6, Naphthalene,
 2-methyl- 91-59-8, 2-Naphthylamine 91-77-0, Melamine,
 N2,N2-diallyl- 92-67-1, 4-Biphenylamine 92-69-3, Phenol,
 p-phenyl- 92-82-0, Phenazine 92-87-5, Benzidine 92-94-4,
 p-Terphenyl 95-20-5, Indole, 2-methyl- 95-54-5,
 o-Phenylenediamine 95-55-6, Phenol, o-amino- 95-65-8,
 3,4-Xylenol 95-87-4, 2,5-Xylenol 96-76-4, Phenol,
 2,4-di-tert-butyl- 98-54-4, Phenol, p-tert-butyl- 100-97-0,
 Hexamethylenetetramine 101-01-9, Guanidine, 1,2,3-triphenyl-
 101-54-2, p-Phenylenediamine, N-phenyl- 102-06-7, Guanidine,
 1,3-diphenyl- 103-29-7, Bibenzyl 103-33-3, Azobenzene
 (benzeneazobenzene) 106-49-0, p-Toluidine 106-50-3,
 p-Phenylenediamine 108-45-2, m-Phenylenediamine 108-46-3,
 Resorcinol 108-68-9, 3,5-Xylenol 108-73-6, Phloroglucinol
 108-78-1, Melamine 108-80-5, s-Triazine-2,4,6(1H,3H,5H)-trione
 108-95-2, Phenol 119-42-6, Phenol, o-cyclohexyl- 119-64-2,
 Naphthalene, 1,2,3,4-tetrahydro- 119-91-5, 2,2'-Biquinoline
 120-72-9, Indole 120-80-9, Pyrocatechol 122-66-7,
 Hydrazobenzene 123-30-8, Phenol, p-amino- 123-31-9,
 Hydroquinone 128-37-0, p-Cresol, 2,6-tert-butyl- 129-00-0,
 Pyrene 129-73-7, Aniline, 4,4'-benzylidenebis[N,N-dimethyl-
 129-79-3, Fluoren-9-one, 2,4,7-trinitro- 134-32-7,
 1-Naphthylamine 135-19-3, 2-Naphthol 135-88-6,
 2-Naphthylamine, N-phenyl- 136-77-6, Resorcinol, 4-hexyl-
 153-78-6, Fluoren-2-amine 191-24-2, Benzo[ghi]perylene
 191-26-4, Dibenzo[def,mno]chrysene 198-55-0, Perylene
 203-64-5, 4H-Cyclopenta[def]phenanthrene 205-12-9,
 7H-Benzo[c]fluorene 218-01-9, Chrysene 238-84-6,
 11H-Benzo[a]fluorene 260-94-6, Acridine 271-63-6,
 1H-Pyrrolo[2,3-b]pyridine 288-32-4, Imidazole 366-18-7,
 2,2'-Bipyridine 479-23-2, Cholanthrene 484-17-3, 9-Phenanthrol
 497-39-2, m-Cresol, 4,6-di-tert-butyl- 501-24-6, Phenol,
 m-pentadecyl- 504-15-4, Resorcinol, 5-methyl- 504-24-5,
 Pyridine, 4-amino- 504-29-0, Pyridine, 2-amino- 519-73-3,
 Methane, triphenyl- 529-35-1, 1-Naphthol, 5,6,7,8-tetrahydro-
 538-51-2, Aniline, N-benzylidene- 576-26-1, 2,6-Xylenol
 588-53-4, Phenol, p-(benzylideneamino)- 588-59-0, Stilbene
 591-27-5, Phenol, m-amino- 599-64-4, Phenol,
 p-(α,α -dimethylbenzyl)- 603-34-9, Triphenylamine
 604-53-5, 1,1'-Binaphthyl 605-55-0, 2-Phenanthrol 612-78-2,
 2,2'-Binaphthyl 612-95-3, Quinoline, 6-phenyl- 613-31-0,
 Anthracene, 9,10-dihydro- 613-33-2, p,p'-Bitolyl 616-55-7,
 o-Cresol, 4,6-di-tert-butyl- 618-45-1, Phenol, m-isopropyl-
 621-09-0, Acetamidine, N,N'-diphenyl- 622-15-1, Formamidine,
 N,N'-diphenyl- 695-34-1, 4-Picoline, 2-amino- 697-82-5,
 Phenol, 2,3,5-trimethyl- 698-71-5, m-Cresol, 5-ethyl-
 732-26-3, Phenol, 2,4,6-tri-tert-butyl- 827-54-3, Naphthalene,
 2-vinyl- 873-74-5, Benzonitrile, p-amino- 877-43-0, Quinoline,

2,6-dimethyl- 883-20-5, Phenanthrene, 9-methyl- 886-65-7,
 1,3-Butadiene, 1,4-diphenyl- 933-67-5, Indole, 7-methyl-
 948-65-2, Indole, 2-phenyl- 1004-38-2, Pyrimidine,
 2,4,6-triamino- 1079-71-6, Anthracene, 1,2,3,4,5,6,7,8-octahydro-
 1125-78-6, 2-Naphthol, 5,6,7,8-tetrahydro- 1131-60-8, Phenol,
 p-cyclohexyl- 1135-32-6, Pyridine, 4,4'-vinylenedi- 1140-29-0,
 Ethylenediamine, N,N-diphenyl- 1195-46-6, Phenol, p-(ethylthio)-
 1470-94-6, 5-Indanol 1556-99-6, Fluorene, 4-methyl- 1603-41-4,
 3-Picoline, 6-amino- 1641-41-4, 4-Indanol 1705-85-7, Chrysene,
 6-methyl- 1806-26-4, Phenol, p-octyl- 1824-81-3, 2-Picoline,
 6-amino- 1885-29-6, Anthranilonitrile 1988-89-2, Phenol,
 p-(α -methylbenzyl)- 2141-42-6, Anthracene,
 1,2,3,4-tetrahydro- 2219-84-3, o-Cresol, 4-(1,1,3,3-
 tetramethylbutyl)- 2379-55-7, Quinoxaline, 2,3-dimethyl-
 2433-56-9, 1-Phenanthrol 2443-58-5, Fluoren-2-ol 2523-37-7,
 Fluorene, 9-methyl- 2717-42-2, Naphthalene, 1,2,4-trimethyl-
 2732-58-3, Chrysene, 6-ethyl- 3228-01-1, o-Cymen-3-ol
 3228-02-2, o-Cymen-5-ol 3228-03-3, m-Cymen-5-ol 3324-27-4,
 Fluoren-9-one, 2,4,7-trinitro-, compound with perylene(1:1)
 3324-30-9, Fluoren-9-one, 2,4,7-trinitro-, compound with
 phenanthrene (1:1) 3353-12-6, Pyrene, 4-methyl- 3357-37-7,
 Guanidine, (benzylideneamino)- 3558-24-5, Indole,
 1-methyl-2-phenyl- 3697-24-3, Chrysene, 5-methyl- 3697-27-6,
 Chrysene, 5,6-dimethyl- 3710-23-4, Naphthalene, 2-isopropenyl-
 3918-78-3, Fluoren-9-one, 2,4,7-trinitro-, compound with pyrene
 (1:1) 4044-57-9, Naphthalene, 1-(phenylethynyl)- 4130-42-1,
 Phenol, 2,6-di-tert-butyl-4-ethyl- 4325-74-0, 1,2'-Binaphthyl
 4325-77-3, Phenanthrene, 2-phenyl- 4482-03-5, Bimesityl
 4511-99-3, as-Triazine, 3-amino-5,6-diphenyl- 4518-00-7, Phenol,
 o-isobornyl- 5315-79-7, 1-Pyrenol 5405-13-0, o-Toluidine,
 N-benzyl- 5412-43-1, 4-Biphenylamine, N,N-diethyl- 5427-08-7,
 Phenol, 2,6-di-tert-butyl-4-cyclohexyl- 6344-61-2, Fluoren-1-ol
 6628-98-4, Pyrene, 4,5-dihydro- 6876-33-1, Benzonitrile,
 2,2',2''-s-triazine-2,4,6-triyltri- 7499-40-3, Picene, 5-methyl-
 15300-67-1, 2,2'-Binaphthyl, compound with 2,4,7-trinitrofluoren-9-
 one 15658-11-4, Methanol, (p-hydroxyphenyl)diphenyl-
 20265-02-5, Fluoren-9-one, 2,4,7-trinitro-, compound with
 fluorene(1:1) 20265-03-6, Chrysene, compound with
 2,4,7-trinitrofluoren-9-one (1:1) 20265-12-7, Fluoren-9-one,
 2,4,7-trinitro-, compound with naphthalene(1:1) 20265-14-9,
 Stilbene, compound with 2,4,7-trinitrofluoren-9-one (1:2)
 20265-14-9, Fluoren-9-one, 2,4,7-trinitro-, compound with stilbene
 (1:1) 25105-01-5, Fluorene, compound with 2,4,7-trinitrofluoren-9-
 one 25105-03-7, Phenanthrene, compound with 2,4,7-trinitrofluoren-
 9-one 25158-59-2, 11H-Benzo[a]fluorene, compound with
 2,4,7-trinitrofluoren-9-one 26104-00-7, Phloroglucinol,
 isopentyl- 33733-07-2, m-Terphenyl, 5'-methyl- 34379-49-2,
 2,4-Xylenol, 6-isobornyl- 35770-75-3, m-Cresol,
 4-(α -methylbenzyl)- 40358-51-8, Naphthalene,
 1-(1-cyclohexen-1-yl)- 52898-84-7, Anthracene, compound with
 2,4,7-trinitrofluoren-9-one 54986-62-8, Chrysene, 5-ethyl-
 65945-06-4, 2-Chrysenol 66591-49-9, Picene, compound with
 2,4,7-trinitrofluoren-9-one 66591-49-9, Fluoren-9-one,
 2,4,7-trinitro-, compound with picene (1:1) 66591-51-3,
 11H-Benzo[b]fluorene, compound with 2,4,7-trinitrofluoren-9-one
 66591-73-9, Chrysene, 5-ethyl-, compound with 2,4,7-trinitrofluoren-

9-one 66591-74-0, Chrysene, 5-methyl-, compound with
2,4,7-trinitrofluoren-9-one 66591-75-1, Fluoren-9-one,
2,4,7-trinitro-, compound with 1,2,3,4-tetrahydroanthracene (1:1)
66591-76-2, Picene, 5-methyl-, compound with 2,4,7-trinitrofluoren-9-
one 66591-76-2, Fluoren-9-one, 2,4,7-trinitro-, compound with
5-methylpicene (1:1) 66778-03-8, Pyrene, 4-ethyl- 66778-18-5,
1,1'-Binaphthyl, 2,2',7,7'-tetramethyl- 66778-23-2,
Bicyclopentyl, 2,2'-dimethyl- 66778-24-3, Naphthalene, 2-o-tolyl
66778-25-4, Picene, 13-methyl- 66903-94-4, Diindeno[1,2,3-
cd:1',2',3'-lm]perylene, compound with 2,4,7-trinitrofluoren-9-one
66907-64-0, 4H-Cyclopenta[def]phenanthrene, compound with
2,4,7-trinitrofluoren-9-one (1:1) 66923-92-0, Phenanthrene,
2-phenyl-, compound with 2,4,7-trinitrofluoren-9-one 66923-92-0,
Fluoren-9-one, 2,4,7-trinitro-, compound with 2-phenylphenanthrene
(1:1) 66923-93-1, Fluoren-9-one, 2,4,7-trinitro-, compound with
1,2,3,4-tetrahydrophenanthrene (1:1) 66923-93-1, Phenanthrene,
1,2,3,4-tetrahydro-, compound with 2,4,7-trinitrofluoren-9-one
66923-94-2, Fluoren-9-one, 2,4,7-trinitro-, compound with
2-methylnaphthalene(2:1) 66923-95-3, 1,2'-Binaphthyl, compound
with 2,4,7-trinitrofluoren-9-one 66923-96-4, Chrysene,
5,6-dimethyl-, compound with 2,4,7-trinitrofluoren-9-one
66923-98-6, Chrysene, 6-ethyl-, compound with 2,4,7-trinitrofluoren-
9-one 66923-99-7, Pyrene, 4,9-dimethyl-, compound with
2,4,7-trinitrofluoren-9-one 66923-99-7, Fluoren-9-one,
2,4,7-trinitro-, compound with 4,9-dimethylpyrene (1:1)
66924-00-3, Cholanthrene, compound with 2,4,7-trinitrofluoren-9-one
66924-02-5, 1,2'-Binaphthyl, 1'-methyl-, compound with
2,4,7-trinitrofluoren-9-one 66924-03-6, Fluoren-9-one,
2,4,7-trinitro-, compound with 4-ethylpyrene (1:1) 66924-03-6,
Pyrene, 4-ethyl-, compound with 2,4,7-trinitrofluoren-9-one
66924-04-7, Chrysene, 6-methyl-, compound with 2,4,7-trinitrofluoren-
9-one 66924-05-8, Cholanthrene, 3-methyl-, compound with
2,4,7-trinitrofluoren-9-one 66924-06-9, Fluoren-9-one,
2,4,7-trinitro-, compound with acenaphthene 66924-07-0,
Fluoren-9-one, 2,4,7-trinitro-, compound with 1-methylnaphthalene
(1:1) 66924-08-1, Phenanthrene, 9-methyl-, compound with
2,4,7-trinitrofluoren-9-one 66924-08-1, Fluoren-9-one,
2,4,7-trinitro-, compound with 9-methylphenanthrene (1:1)
66924-09-2, 7H-Benzo[c]fluorene, compound with 2,4,7-trinitrofluoren-
9-one 66924-10-5, Fluoren-9-one, 2,4,7-trinitro-, compound with
4-methylpyrene (1:1) 66924-10-5, Pyrene, 4-methyl-, compound with
2,4,7-trinitrofluoren-9-one 66924-11-6, Fluoren-9-one,
2,4,7-trinitro-, compound with 2-benzyl-naphthalene 66924-12-7,
Fluoren-9-one, 2,4,7-trinitro-, compound with 2-phenylnaphthalene
(1:1) 66924-13-8, Fluoranthene, compound with 2,4,7-
trinitrofluoren-9-one (1:1) 66924-14-9, Fluoren-9-one,
2,4,7-trinitro-, compound with diphenylacetylene(1:1) 67011-59-0,
Methanol, diphenyl(3,4,5-trihydroxyphenyl)- 90116-17-9,
Fluoren-9-one, 2,4,7-trinitro-, compound with 11H-indeno[2,1-
a]phenanthrene (1:1) 90914-84-4, Imidazole, 2-(α -
aminobenzyl)- 92348-31-7, Cyclohexadienediol, dimethyl-
96674-12-3, Dibenzo[def,mno]chrysene, compound with
2,4,7-trinitrofluoren-9-one (1:1) 96872-57-0, Fluoren-9-one,
2,4,7-trinitro-, compound with 1,4-diphenyl-1,3-butadiene(2:1)
97331-47-0, Fluoranthene, sodium complex 102217-61-8, Benzidine,
diphenyl- 106304-19-2, Benzo[k]fluoranthene, compound with

2,4,7-trinitrofluoren-9-one 106844-42-2, Fluoren-9-one,
2,4,7-trinitro-, compound with 5,6-dihydro-4H-benz[de]anthracene
119925-41-6, Naphthalene, 2-methyl-, compound with
2,4,7-trinitrofluoren-9-one 137065-33-9, 1,3-Butadiene,
1,4-diphenyl-, compound with 2,4,7-trinitrofluoren-9-one
(x-ray diffraction pattern for)

L22 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1962:480261 HCAPLUS
DOCUMENT NUMBER: 57:80261
ORIGINAL REFERENCE NO.: 57:15954d-f
TITLE: Semiconductivities and charge transfer spectra
of solid molecular complexes of
1,3,5-trinitrobenzene
AUTHOR(S): Kuroda, Haruo; Yoshihara, Keitaro; Akamatsu,
Hideo
CORPORATE SOURCE: Tokyo Univ.
SOURCE: Bulletin of the Chemical Society of Japan
(1962), 35, 1604-8
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB A series of solid complexes of aromatic hydrocarbons and amines with
1,3,5-trinitrobenzene as the common electron acceptor were prepared
These complexes were of the loose mol. complex type, and the
charge transfer bands were observed with the solid complexes, which
showed only small red-shifts from the corresponding bands of the
solns. These solid complexes are poor semiconductors. The energy
gap for the excitation to the conduction state is relatively large
and is nearly coincident with the energy for the charge transfer
excitation. Apparently the charge transfer state in the crystal
may not differ much from the corresponding state in the isolated
(1:1) complex in the solution The relation between the
charge-transfer state and the conduction state is discussed, and a
probable model for the formation of a charge carrier is suggested.

IT 34892-84-7, Dibenzo[def,mno]chrysene, compound with
1,3,5-trinitrobenzene
(elec. semicond. and spectrum of)

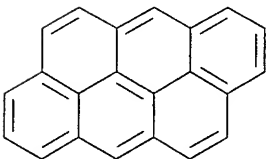
RN 34892-84-7 HCAPLUS

CN Dibenzo[def,mno]chrysene, compd. with 1,3,5-trinitrobenzene (1:1)
(9CI) (CA INDEX NAME)

CM 1

CRN 191-26-4

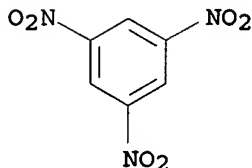
CMF C22 H12



CM 2

CRN 99-35-4

CMF C6 H3 N3 O6



CC 9 (Electric and Magnetic Phenomena)

IT 2499-09-4, Anthracene, compound with 1,3,5-trinitrobenzene
6164-86-9, Pyrene, compound with 1,3,5-trinitrobenzene (1:1)
16580-43-1, Aniline, compound with 1,3,5-trinitrobenzene
16615-54-6, Aniline, p-chloro-, compound with 1,3,5-trinitrobenzene
16615-59-1, p-Phenylenediamine, compound with 1,3,5-trinitrobenzene
16636-09-2, Aniline, N,N-dimethyl-, compound with
1,3,5-trinitrobenzene 16636-10-5, 1-Naphthylamine, compound with
1,3,5-trinitrobenzene 20265-09-2, Benzidine, compound with
1,3,5-trinitrobenzene 23950-31-4, Perylene, compound with
1,3,5-trinitrobenzene 29271-85-0, Phenanthrene, compound with
1,3,5-trinitrobenzene 34892-84-7,
Dibenzo[def,mno]chrysene, compound with 1,3,5-trinitrobenzene
72735-57-0, Chrysene, compound with 1,3,5-trinitrobenzene
95131-55-8, Benzidine, N,N,N',N'-tetramethyl-, compound with
1,3,5-trinitrobenzene 105819-69-0, Violanthrene, compound with
1,3,5-trinitrobenzene
(elec. semicond. and spectrum of)

L22 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1957:99020 HCAPLUS

DOCUMENT NUMBER: 51:99020

ORIGINAL REFERENCE NO.: 51:17866b-g

TITLE: Polycyclic aromatic hydrocarbons. III.
Substitution derivatives of anthanthrene

AUTHOR(S): Buu-Hoi, Ng. Ph.; Lavit, Denise

CORPORATE SOURCE: Univ. Paris

SOURCE: Recueil des Travaux Chimiques des Pays-Bas et
de la Belgique (1957), 76, 200-4
CODEN: RTCPB4; ISSN: 0370-7539

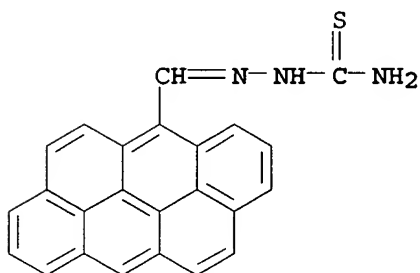
DOCUMENT TYPE: Journal

LANGUAGE: French

AB cf. C.A. 51, 4340g, 15480a. Since carcinogenic activity is augmented by meso-substitution in anthracene hydrocarbons, the chemical reactivity of anthanthrene (I) was investigated. Anthanthrene (II) (30 g.), 30 g. powdered Zn, 30 g. NaCl, 150 g. anhydrous ZnCl₂ intimately mixed and treated with 5 ml. H₂O, stirred to a paste at 210°, kept several min. at 290°, the cold mass treated with dilute HCl, kept overnight, filtered, and the powdered product dried and crystallized from 1500 ml. anhydrous PhMe containing a trace of hydroquinone yielded 18 g. I, m. 265°

(sublimation), deep brown halochromy with H₂SO₄. I (8 g.), 4.7 g. HCON-MePh, and 5.4 g. POCl₃ heated 4 hrs. on a steam bath with 8 ml. o-ClC₆H₄Cl, the mixture poured into concentrated aqueous NaOAc, stirred with 50 ml. o-ClC₆H₄Cl, steam-distilled, cooled, filtered, and the product washed with H₂O, dried, and repeatedly crystallized from PhCl gave 4.7 g. 6-anthanthroic aldehyde (III), m. 260°, dark green halochromy in H₂SO₄, vivid green fluorescence in hydrocarbon solns.; thiosemicarbazone, m. 275°. III (7.6 g.) in 700 ml. (CH₂OH)₂ boiled 2 hrs. with 8 g. 95% N₂H₄. H₂O, treated with 8 g. KOH, boiled 45 min. (loss of H₂O), the cold residue diluted with H₂O, filtered, and the precipitate dried in vacuo and recrystd. from C₆H₆ yielded 5.3 g. 6-methylanthanthrene (IV), m. 192°, deep brown halochromy with H₂SO₄, vivid blue fluorescence in C₆H₆, converted by boiling with CrO₃ in AcOH to II, m. 340°, green coloration in H₂SO₄. Formylation of 6.2 g. IV as above gave 3.5 g. 12-formyl-6-methylanthanthrene, m. 328°, green halochromy in H₂SO₄, green fluorescence in PhCl, reduced as above to 6,12-dimethylanthanthrene (V), m. 281°, brown-black halochromy and intense blue-green coloration in C₆H₆, oxidized by CrO₃ in AcOH to II. I (0.3 g.) in 75 ml. o-ClC₆H₄Cl treated dropwise with 0.33 g. SO₂Cl₂ in 10 ml. o-ClC₆H₄Cl, the mixture kept at room temperature 24 hrs., filtered, and the washed and dried precipitate recrystd. repeatedly from PhCl yielded 0.1 g. 6,12-dichloroanthanthrene, m. 374°, pale violet-brown halochromy, oxidized to II. Attempts to nitrate I in PhNO₂ with HNO₃ (d. 1.52) at room temperature 2 days failed to give any definite nitration product. IV and V are under examination for carcinogenic properties.

- IT 120233-61-6, Dibenzo[def,mno]chrysene-6-carboxaldehyde, thiosemicarbazone (preparation of)
 RN 120233-61-6 HCAPLUS
 CN Dibenzo[cd,jk]pyrene-6-carboxaldehyde, thiosemicarbazone (6CI) (CA INDEX NAME)



- CC 10 (Organic Chemistry)
 IT 31927-64-7, Dibenzo[def,mno]chrysene, 6-methyl- 41217-05-4,
 Dibenzo[def,mno]chrysene, 6,12-dimethyl- 63040-55-1,
 Dibenzo[def,mno]chrysene-6-carboxaldehyde 63040-58-4,
 Dibenzo[def,mno]chrysene-6-carboxaldehyde, 12-methyl-
 102442-55-7, Dibenzo[def,mno]chrysene, 6,12-dichloro-
 120233-61-6, Dibenzo[def,mno]chrysene-6-carboxaldehyde, thiosemicarbazone

(preparation of)

L22 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1953:15806 HCAPLUS

DOCUMENT NUMBER: 47:15806

ORIGINAL REFERENCE NO.: 47:2739b-e

TITLE: X-ray diffraction patterns of 2, 4,
7-trinitro-9-fluorenone derivatives of
aromatic hydrocarbons

AUTHOR(S): Hofer, L. J. E.; Peebles, W. C.

CORPORATE SOURCE: U.S. Bur. of Mines, Bruceton, PA

SOURCE: Anal. Chem. (1952), 24, 822-6

CODEN: ANCHAM; ISSN: 0003-2700

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB X-ray diffraction powder patterns are presented for 45 highly purified complexes of 2,4,7-trinitro-9-fluorenone (T.N.F.) and aromatic hydrocarbons, together with m.p. data. These complexes are those of C₁₀H₈, 1-C₁₀H₇Me, acenaphthene, fluorene, anthracene, (PhC.tplbond.)₂, phenanthrene, trans-stilbene, 1,2,3,4-tetrahydroanthracene, 1,2,3,4-tetrahydrophenanthrene, 4H-cyclopenta[def]phenanthrene, 9-methylphenanthrene, fluoranthrene, pyrene, 2-C₁₀H₇Ph, 1,2-, 2,3-, and 3,4-benzofluorene, 4-methylpyrene, 2-C₁₀H₇CHPh, 1,10-trimethylphenanthrene, chrysene, 4,9-dimethylpyrene, 4-ethylpyrene, 5-, and 6-methylchrysene, benzo[k]fluoranthene, perylene, cholanthrene, (2-C₁₀H₇)₂, 2-phenylphenanthrene, 5,6-dimethyl-, 5-ethyl-, and 6-ethylchrysene, naphtho[1,2-a]fluorene, 20-methylcholanthrene, 2,1-(1-C₁₀H₇)C₁₀H₆Me, dibenzo[cd, jk]pyrene, picene, 5-methylpicene, 2-C₁₀H₇Me, trans(PhCH:CH)₂, periflanthene, 1,2'-binaphthyl, and T.N.F. itself. The stoichiometry of all the above complexes is 1 mol. hydrocarbon combined with 1 mol. of T.N.F. with the exception of 1,2'- binaphthyl and trans-, trans-(PhCH:CH)₂, which contained 2 mols. T.N.F. and 1 of hydrocarbon. The patterns were taken with filtered FeK α radiation in 57.30 mm. and 114.59 mm. Debye Scherrer cameras. The number of spacings in the 3.1-3.5 A. interplanar spacing range is disproportionately large when compared with the interplanar spacing distribution of pure crystalline aromatic hydrocarbons (C.A. 45, 7405d). Nevertheless each pattern is unique and the method is proposed as highly reliable for pos. identification.

IT 96674-12-3, Dibenzo[cd,jk]pyrene, compound with
2,4,7-trinitro-9-fluorenone
(diffraction of x-rays by)

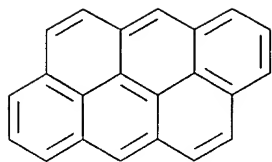
RN 96674-12-3 HCAPLUS

CN Dibenzo[def,mno]chrysene, compd. with 2,4,7-trinitrofluoren-9-one
(1:1) (7CI) (CA INDEX NAME)

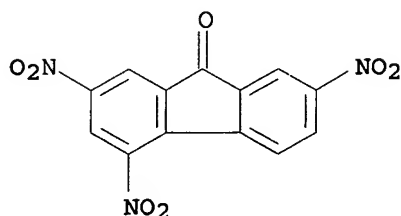
CM 1

CRN 191-26-4

CMF C22 H12



CM 2

CRN 129-79-3
CMF C13 H5 N3 O7

CC 10 (Organic Chemistry)
IT 3324-27-4, Perylene, compound with 2,4,7-trinitro-9-fluorenone
3324-30-9, Phenanthrene, compds. with 2,4,7-trinitro-9-fluorenone
20265-02-5, Fluorene, compound with 2,4,7-trinitro-9-fluorenone
20265-03-6, Chrysene, compound with 2,4,7-trinitro-9-fluorenone
20265-14-9, Stilbene, trans-, compound with 2,4,7-trinitro-9-fluorenone
66591-49-9, Picene, compound with 2,4,7-trinitro-9-fluorenone
66591-51-3, 11H-Benzo[b]fluorene, compound with 2,4,7-trinitro-9-fluorenone
66591-73-9, Chrysene, 5-ethyl-, compds. with 2,4,7-trinitro-9-fluorenone
66591-74-0, Chrysene, 5-methyl-, compds. with 2,4,7-trinitro-9-fluorenone
66591-75-1, Anthracene, 1,2,3,4-tetrahydro-, compound with 2,4,7-trinitro-9-fluorenone
66591-76-2, Picene, 5-methyl-, compound with 2,4,7-trinitro-9-fluorenone
66903-94-4, Periflanthene, compound with 2,4,7-trinitro-9-fluorenone
66903-96-6, 13H-Naphtho[1,2-a]fluorene, compound with 2,4,7-trinitro-9-fluorenone
66907-64-0, 4H-Cyclopenta[def]phenanthrene, compound with 2,4,7-trinitro-9-fluorenone
66923-92-0, Phenanthrene, 2-phenyl-, compound with 2,4,7-trinitro-9-fluorenone
66923-93-1, Phenanthrene, 1,2,3,4-tetrahydro-, compound with 2,4,7-trinitro-9-fluorenone
66923-96-4, Chrysene, 5,6-dimethyl-, compound with 2,4,7-trinitro-9-fluorenone
66923-97-5, Chrysofluorene, compound with 2,4,7-trinitro-9-fluorenone
66923-98-6, Chrysene, 6-ethyl-, compds. with 2,4,7-trinitro-9-fluorenone
66923-99-7, Pyrene, 4,9-dimethyl-, compound with 2,4,7-trinitro-9-fluorenone
66924-00-3, Cholanthrene, compound with 2,4,7-trinitro-9-fluorenone
66924-02-5, 1,2'-Binaphthyl, 1'-methyl-, compound with 2,4,7-trinitro-9-fluorenone
66924-03-6, Pyrene, 4-ethyl-, compound with 2,4,7-trinitro-9-fluorenone
66924-04-7, Chrysene, 6-methyl-, compds. with 2,4,7-trinitro-9-

fluorenone 66924-05-8, Cholanthrene, 3-methyl-, compound with
2,4,7-trinitro-9-fluorenone 66924-06-9, Acenaphthene, compds.
with 2,4,7-trinitro-9-fluorenone 66924-07-0, Naphthalene,
1-methyl-, compound with 2,4,7-trinitro-9-fluorenone 66924-07-0,
Naphthalene, 1-methyl-, compound with 2,4,7-trinitro-9-fluorenone
66924-08-1, Phenanthrene, 9-methyl-, compound with
2,4,7-trinitro-9-fluorenone 66924-09-2, 7H-Benzo[c]fluorene,
compound with 2,4,7-trinitro-9-fluorenone 66924-10-5, Pyrene,
4-methyl-, compound with 2,4,7-trinitro-9-fluorenone 66924-12-7,
Naphthalene, 2-phenyl-, compound with 2,4,7-trinitro-9-fluorenone
66924-13-8, Fluoranthene, compound with 2,4,7-trinitro-9-fluorenone
66924-14-9, Acetylene, diphenyl-, compound with 2,4,7-trinitro-9-
fluorenone 96674-12-3, Dibenzo[cd,jk]pyrene, compound with
2,4,7-trinitro-9-fluorenone 106304-19-2, Benzo[k]fluoranthene,
compound with 2,4,7-trinitro-9-fluorenone 106844-42-2,
4H-Benz[de]anthracene, 5,6-dihydro-, compound with
2,4,7-trinitro-9-fluorenone 119925-41-6, Naphthalene, 2-methyl-,
compound with 2,4,7-trinitro-9-fluorenone 854234-28-9,
2,2'-Binaphthyl, compound with 2,4,7-trinitro-9-fluorenone
(diffraction of x-rays by)

=>

=> d his ful

(FILE 'HOME' ENTERED AT 10:09:57 ON 24 OCT 2005)

FILE 'HCAPLUS' ENTERED AT 10:10:23 ON 24 OCT 2005

E US20050048313/PN

L1 1 SEA ABB=ON PLU=ON US20050048313/PN
D ALL
SEL L1 RN

FILE 'REGISTRY' ENTERED AT 10:11:38 ON 24 OCT 2005

L2 17 SEA ABB=ON PLU=ON (101-70-2/BI OR 1205-64-7/BI OR
154230-29-2/BI OR 56752-35-3/BI OR 620-93-9/BI OR
845896-91-5/BI OR 845896-92-6/BI OR 845896-93-7/BI OR
845896-94-8/BI OR 845896-96-0/BI OR 845896-97-1/BI OR
845896-98-2/BI OR 845896-99-3/BI OR 845897-00-9/BI OR
845897-01-0/BI OR 85514-20-1/BI OR 90-30-2/BI)
D SCAN

E PHENATHRENE/CN

E PHENANTHRENE/CN

L3 1 SEA ABB=ON PLU=ON PHENANTHRENE/CN
D SCAN
D RN

E 85-01-8/RN

L4 1 SEA ABB=ON PLU=ON 85-01-8/RN
D SCAN
D RSD

E 2404.11.109/RID

E 2404.11/RID

E 2404/RID

E PYRENE/CN

L5 1 SEA ABB=ON PLU=ON PYRENE/CN
D RSD
E 3593.5.31/RID

D RN

E 129-00-0/RN

L6 1 SEA ABB=ON PLU=ON 129-00-0/RN
D SCAN
E 3593.5.31/RID

E 3593.5/RID

E 3593/RID

FILE 'LREGISTRY' ENTERED AT 10:59:08 ON 24 OCT 2005

L7 STR 85-01-8

L8 STR L7

FILE 'REGISTRY' ENTERED AT 11:00:56 ON 24 OCT 2005

L9 50 SEA SSS SAM L7

L10 50 SEA SSS SAM L8

L11 SCR 1841 AND 1993

L12 50 SEA SSS SAM L7 AND L11

D QUE STAT L12

L13 50 SEA SSS SAM L8 AND L11

D QUE STAT

FILE 'LREGISTRY' ENTERED AT 11:09:11 ON 24 OCT 2005

L14 STR 129-00-0
L15 STR L14
L16 STR 85514-20-1
L17 STR L16

FILE 'REGISTRY' ENTERED AT 11:20:19 ON 24 OCT 2005
L18 50 SEA SSS SAM L14
D QUE STAT
L19 50 SEA SSS SAM L15
L20 20 SEA SSS SAM L16
D QUE STAT
L21 2 SEA SSS SAM L17
D SCAN
D QUE STAT L18

FILE 'LREGISTRY' ENTERED AT 11:29:07 ON 24 OCT 2005
L22 STR L14

FILE 'REGISTRY' ENTERED AT 11:30:02 ON 24 OCT 2005
D QUE STAT
D QUE STAT

FILE 'LREGISTRY' ENTERED AT 11:31:00 ON 24 OCT 2005
L23 STR L22

FILE 'REGISTRY' ENTERED AT 11:31:20 ON 24 OCT 2005
L24 50 SEA SSS SAM L23

FILE 'LREGISTRY' ENTERED AT 11:31:47 ON 24 OCT 2005
L25 STR L14

FILE 'REGISTRY' ENTERED AT 11:32:20 ON 24 OCT 2005
L26 50 SEA SSS SAM L25

SAV TEMP L27 THO546/A

FILE 'REGISTRY' ENTERED AT 12:03:16 ON 24 OCT 2005
L27 STR L8
D QUE STAT
L28 50 SEA SSS SAM L27 AND L11
L29 SCR 1918
L30 50 SEA SSS SAM L27 AND L11 NOT L29
D QUE STAT
L31 25083 SEA SSS FUL L27 AND L11 NOT L29
SAV L31 THO546A/A
D QUE STAT L16
D QUE STAT L17
D QUE STAT L20
D QUE STAT L21
D QUE STAT L16
D QUE STAT L17
L32 18 SEA SUB=L31 SSS SAM L16
D SCAN

FILE 'LREGISTRY' ENTERED AT 12:16:45 ON 24 OCT 2005
L33 STR L16

L34 FILE 'REGISTRY' ENTERED AT 12:23:51 ON 24 OCT 2005
0 SEA SSS SAM L33
D QUE STAT L16
D QUE STAT L32

L35 FILE 'LREGISTRY' ENTERED AT 12:26:00 ON 24 OCT 2005
STR L16

L36 FILE 'REGISTRY' ENTERED AT 12:26:36 ON 24 OCT 2005
18 SEA SUB=L31 SSS SAM L35
D QUE STAT
D QUE STAT L34

L37 FILE 'LREGISTRY' ENTERED AT 12:28:20 ON 24 OCT 2005
STR L33

L38 FILE 'REGISTRY' ENTERED AT 12:30:10 ON 24 OCT 2005
0 SEA SUB=L31 SSS SAM L37

L39 FILE 'LREGISTRY' ENTERED AT 12:30:25 ON 24 OCT 2005
STR L37

L40 FILE 'REGISTRY' ENTERED AT 12:30:50 ON 24 OCT 2005
0 SEA SUB=L31 SSS SAM L39
D QUE STAT L35

L41 18 SEA SUB=L31 SSS SAM L35

L42 432 SEA SUB=L31 SSS FUL L35
SAV L42 THO546B/A

L43 FILE 'LREGISTRY' ENTERED AT 12:33:31 ON 24 OCT 2005
D QUE STAT L37
STR L37

L44 FILE 'REGISTRY' ENTERED AT 12:35:25 ON 24 OCT 2005
0 SEA SUB=L42 SSS SAM L43

L45 37 SEA SUB=L42 SSS FUL L43
SAV L45 THO546C/A
D QUE STAT L37

L46 FILE 'LREGISTRY' ENTERED AT 12:40:06 ON 24 OCT 2005
STR L37

L47 FILE 'REGISTRY' ENTERED AT 12:41:38 ON 24 OCT 2005
0 SEA SUB=L42 SSS SAM L46

L48 4 SEA SUB=L42 SSS FUL L46
D SCAN
SAV L48 THO546D/A
D QUE STAT L14
D QUE STAT L15
D QUE STAT L14

L49 50 SEA SUB=L31 SSS SAM L14
D QUE STAT

L50 FILE 'LREGISTRY' ENTERED AT 12:48:55 ON 24 OCT 2005
STR L14

FILE 'REGISTRY' ENTERED AT 12:52:27 ON 24 OCT 2005
D QUE STAT
L51 2 SEA SUB=L31 SSS SAM L50
D SCAN
D QUE STAT
L52 45 SEA SUB=L31 SSS FUL L50

FILE 'LREGISTRY' ENTERED AT 13:00:14 ON 24 OCT 2005
L53 STR L50

FILE 'REGISTRY' ENTERED AT 13:10:30 ON 24 OCT 2005
D QUE STAT L42
L54 10 SEA SUB=L31 SSS SAM L53
D SCAN
L55 108 SEA SUB=L31 SSS FUL L53
SAV L55 THO546E/A
D QUE STAT L48
D QUE STAT L52
D SAV
SAV L55 THO546F/A
D SAV
SAV L52 THO546F/A
D SAV
L56 5 SEA ABB=ON PLU=ON L55 AND L52
D SCAN
SAV L56 THO546G/A
D SAV
L57 103 SEA ABB=ON PLU=ON L55 NOT L56

FILE 'LREGISTRY' ENTERED AT 13:20:42 ON 24 OCT 2005
L58 STR

FILE 'REGISTRY' ENTERED AT 13:31:44 ON 24 OCT 2005
D QUE STAT
D QUE STAT L14

FILE 'LREGISTRY' ENTERED AT 13:37:28 ON 24 OCT 2005
L59 STR

FILE 'REGISTRY' ENTERED AT 13:47:51 ON 24 OCT 2005
L60 50 SEA SSS SAM L59
D QUE STAT
L61 1968 SEA SSS FUL L59
SAV L61 THO546H/A
L62 337 SEA ABB=ON PLU=ON L61 AND 1/AL
SAV L62 THO546I/A
E C27H18ALN3O3/MF
L63 7 SEA ABB=ON PLU=ON C27H18ALN3O3/MF
D SCAN
L64 330 SEA ABB=ON PLU=ON L62 NOT L63

FILE 'HCAPLUS' ENTERED AT 14:00:34 ON 24 OCT 2005
D QUE STAT L31
D QUE STAT L30
D QUE STAT L42

D QUE STAT L45

FILE 'REGISTRY' ENTERED AT 14:03:19 ON 24 OCT 2005

D QUE STAT L48
 D SCAN L48
 D QUE STAT L52
 E 845896-94-8/RN
 L65 1 SEA ABB=ON PLU=ON 845896-94-8/RN
 D SCAN
 L66 1 SEA ABB=ON PLU=ON 845896-97-1/RN
 D SCAN
 L67 1 SEA ABB=ON PLU=ON 845896-98-2/RN
 D SCAN

FILE 'HCAPLUS' ENTERED AT 14:14:00 ON 24 OCT 2005

L68 1 SEA ABB=ON PLU=ON L48
 L69 2 SEA ABB=ON PLU=ON L56
 D L69 1-2 HITSTR
 L70 38 SEA ABB=ON PLU=ON L57
 L71 4929 SEA ABB=ON PLU=ON L63
 L72 248 SEA ABB=ON PLU=ON L64
 D L72 1-5 FHITSTR
 L73 5944 SEA ABB=ON PLU=ON L61
 L74 880 SEA ABB=ON PLU=ON L73 NOT (L71 OR L72)
 D QUE L70
 L75 1 SEA ABB=ON PLU=ON L65
 L76 1 SEA ABB=ON PLU=ON L66
 L77 1 SEA ABB=ON PLU=ON L67
 L78 1 SEA ABB=ON PLU=ON L65 AND L66 AND L67
 D QUE STAT L68
 L79 3 SEA ABB=ON PLU=ON L68 OR L69 OR L78
 L80 1 SEA ABB=ON PLU=ON L68 AND L78
 D QUE STAT L69
 D QUE STAT L70

FILE 'REGISTRY' ENTERED AT 14:32:51 ON 24 OCT 2005

D QUE STAT L48
 D QUE STAT L52
 D QUE L56
 L81 7 SEA ABB=ON PLU=ON L48 OR L65 OR L66 OR L67
 D QUE STAT L56
 D QUE STAT L57
 D QUE STAT L63
 D QUE STAT L64
 L82 0 SEA ABB=ON PLU=ON L81 AND L56
 L83 0 SEA ABB=ON PLU=ON L81 AND L57
 L84 0 SEA ABB=ON PLU=ON L81 AND L63
 L85 0 SEA ABB=ON PLU=ON L81 AND L64

FILE 'HCAPLUS' ENTERED AT 14:39:57 ON 24 OCT 2005

L86 1 SEA ABB=ON PLU=ON L81
 D SCAN
 L87 0 SEA ABB=ON PLU=ON L80 AND L70
 L88 0 SEA ABB=ON PLU=ON L80 AND L71
 L89 0 SEA ABB=ON PLU=ON L80 AND L71
 L90 0 SEA ABB=ON PLU=ON L80 AND L72

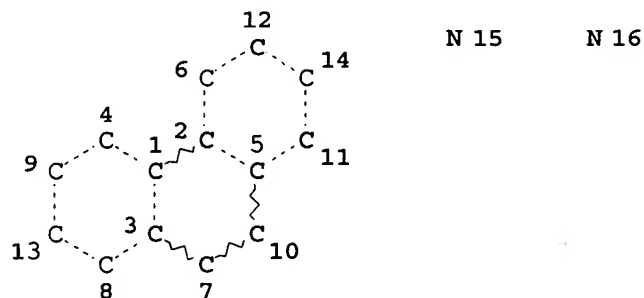
L91 0 SEA ABB=ON PLU=ON L80 AND L73
 L92 0 SEA ABB=ON PLU=ON L80 AND L74
 L93 40 SEA ABB=ON PLU=ON (L68 OR L69 OR L70) OR (L75 OR L76
 OR L77 OR L78 OR L79 OR L80) OR L86
 L94 424974 SEA ABB=ON PLU=ON FLUORES?
 L95 3 SEA ABB=ON PLU=ON L94 AND L93
 L96 5944 SEA ABB=ON PLU=ON (L71 OR L72 OR L73 OR L74)
 L97 591 SEA ABB=ON PLU=ON L94 AND L96

 L98 530 SEA ABB=ON PLU=ON L94 AND L71
 L99 51 SEA ABB=ON PLU=ON L94 AND L72
 L100 33 SEA ABB=ON PLU=ON L94 AND L74
 L101 110154 SEA ABB=ON PLU=ON ELECTROLUM!N? OR ORGANOLUM!N? OR
 (ELECTRO OR ORGANO OR ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMI
 T? OR EMISSION?) OR EL OR E(W)L OR OLED OR L(W)E(W)D
 OR LED/IT
 L102 16 SEA ABB=ON PLU=ON L93 AND L101
 L103 4539 SEA ABB=ON PLU=ON L101 AND L96
 L104 QUE ABB=ON PLU=ON EL OR E(W)L OR L(W)E(W)D OR OLED
 OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO
 OR ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMIT? OR EMISSION? OR
 SOURCE?)
 L105 QUE ABB=ON PLU=ON (LUMINES##### OR FLUORES? OR
 PHOSPHORES?)/BI,AB OR LED/IT OR PHOSPHOR# OR LUMIN?
 D QUE STAT L104
 D QUE STAT L105
 D QUE STAT L101
 L106 16 SEA ABB=ON PLU=ON L104 AND L93
 L107 13 SEA ABB=ON PLU=ON L105 AND L93
 L108 16 SEA ABB=ON PLU=ON L106 OR L107
 L109 4538 SEA ABB=ON PLU=ON L104 AND L96
 L110 3415 SEA ABB=ON PLU=ON L105 AND L96
 L111 4768 SEA ABB=ON PLU=ON L109 OR L110
 L112 3185 SEA ABB=ON PLU=ON L109 AND L110
 L113 98599 SEA ABB=ON PLU=ON LAYER? (2A) (SINGLE OR ONE OR 1)
 L114 519 SEA ABB=ON PLU=ON L113 AND L109
 L115 362 SEA ABB=ON PLU=ON L113 AND L110
 L116 522 SEA ABB=ON PLU=ON L113 AND L111
 L117 359 SEA ABB=ON PLU=ON L113 AND L112
 L118 5482 SEA ABB=ON PLU=ON (ORG OR ORGANIC?) (4A) (ELECTROLUMIN?
 OR ELECTRO (A) LUMIN?) (4A) DISPLAY? OR OLED
 L119 105 SEA ABB=ON PLU=ON L118 AND L114
 L120 73 SEA ABB=ON PLU=ON L118 AND L115
 L121 105 SEA ABB=ON PLU=ON L118 AND L116
 L122 73 SEA ABB=ON PLU=ON L118 AND L117
 L123 73 SEA ABB=ON PLU=ON L119 AND L120 AND L121 AND L122
 L124 1129 SEA ABB=ON PLU=ON (ORG OR ORGANIC) (3A) LIGHT? (3A) EMIT?
 (3A) LAYER?
 L125 11 SEA ABB=ON PLU=ON L124 AND L123
 L126 17 SEA ABB=ON PLU=ON L124 AND L119
 L127 11 SEA ABB=ON PLU=ON L124 AND L120
 L128 17 SEA ABB=ON PLU=ON L124 AND L121
 L129 11 SEA ABB=ON PLU=ON L124 AND L122
 L130 11 SEA ABB=ON PLU=ON L124 AND L123
 L131 17 SEA ABB=ON PLU=ON ((L126 OR L127 OR L128 OR L129 OR
 L130))

L132 17 SEA ABB=ON PLU=ON L131 OR L125
L133 40 SEA ABB=ON PLU=ON L95 OR L93
L134 39 SEA ABB=ON PLU=ON L133 NOT (L68 OR L78 OR L86)
L135 1 SEA ABB=ON PLU=ON L80 OR L86

=> => d que stat l135

L11 SCR 1841 AND 1993
L27 STR



NODE ATTRIBUTES:

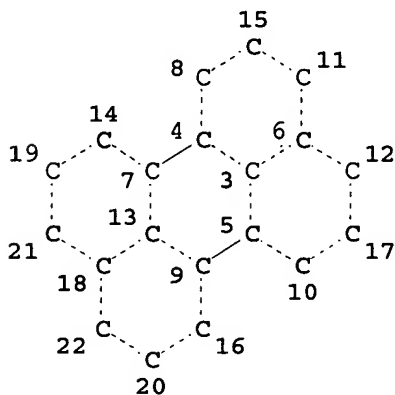
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NSPEC IS RC AT 16
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE

L29 SCR 1918
L31 25083 SEA FILE=REGISTRY SSS FUL L27 AND L11 NOT L29
L35 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

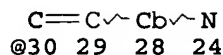
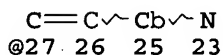
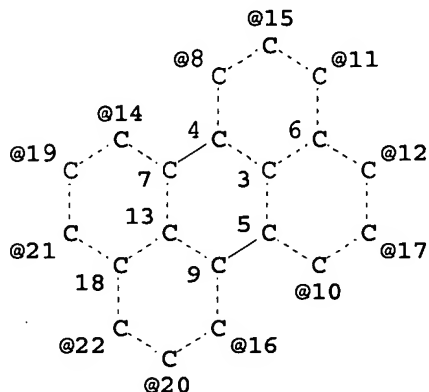
RSPEC I

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L42 432 SEA FILE=REGISTRY SUB=L31 SSS FUL L35

L46 STR



VPA 27-14/19/21/22/20/16 U

VPA 30-8/15/11/12/17/10 U

NODE ATTRIBUTES:

NSPEC IS RC AT 23

NSPEC IS RC AT 24

DEFAULT MLEVEL IS ATOM

GGCAT IS MCY UNS AT 25

GGCAT IS MCY UNS AT 28

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS E6 C AT 25

ECOUNT IS E6 C AT 28

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

L48 4 SEA FILE=REGISTRY SUB=L42 SSS FUL L46

L65 1 SEA FILE=REGISTRY ABB=ON PLU=ON 845896-94-8/RN

L66 1 SEA FILE=REGISTRY ABB=ON PLU=ON 845896-97-1/RN

L67 1 SEA FILE=REGISTRY ABB=ON PLU=ON 845896-98-2/RN

L68 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L48

L78 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L65 AND L66 AND L67

L80 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L68 AND L78

L81 7 SEA FILE=REGISTRY ABB=ON PLU=ON L48 OR L65 OR L66 OR L67

L86 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L81

L135 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L80 OR L86

=> d l135 1 cbib abs hitstr hitind

L135 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:182182 Document No. 142:268913 Fluorescent material, organic electroluminescent element and organic electroluminescent display. Sotoyama, Wataru (Fujitsu Limited, Japan). U.S. Pat. Appl. Publ. US 2005048313 A1 20050303, 25 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-801546 20040317. PRIORITY: JP 2003-305621 20030829.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

*

AB The invention refers to an organic electroluminescent element having an organic light-emitting layer between an anode and a cathode, wherein the organic light-emitting layer comprises, as an organic light-emitting layer forming material, a fluorescent material comprising a perylene compound I [R1-12 = H or -CH:CH-Ph-N(R13)R14, wherein two or more are not H; R13,14 = (un)substituted aromatic or aliphatic and may be bonded to each other] and/or an anthanthrene compound II [R101-112 = H or N(R113)R114, wherein 4 or more are not H; R113,114 = (un)substituted aromatic or aliphatic and may be bonded to each other]. A fluorescent material that emits red light with a high color purity and a high luminous efficiency-when used singly or as a guest, an organic EL element having a high luminous efficiency, and a high-performance organic EL display having a high luminous efficiency are realized.

IT 845896-91-5P 845896-93-7P 845896-94-8P
845896-97-1P 845896-98-2P 845896-99-3P
845897-00-9P

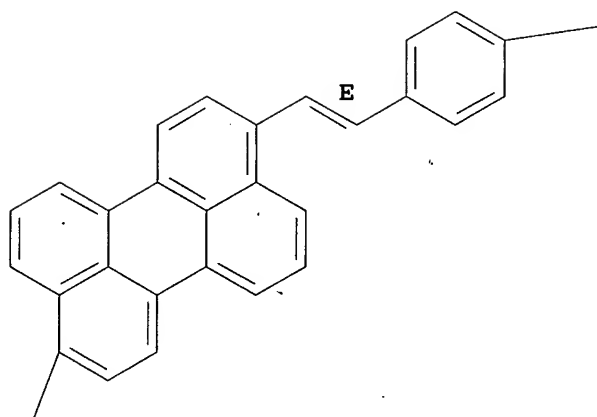
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fluorescent material, organic electroluminescent element and organic electroluminescent display using perylene and anthanthrene derivs.)

RN 845896-91-5 HCAPLUS

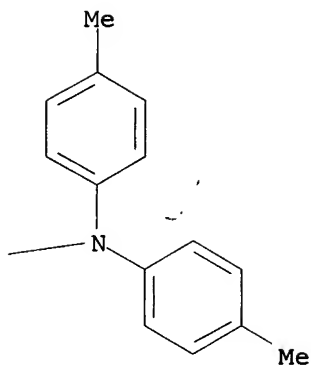
CN Benzenamine, 4,4'-[3,9-perylenediyl-di-(1E)-2,1-ethenediyl]bis[N,N-bis(4-methylphenyl)- (9E)]- (CA INDEX NAME)

Double bond geometry as shown.

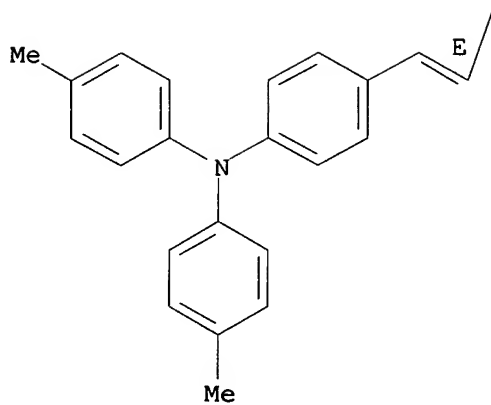
PAGE 1-A



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PAGE 2-A

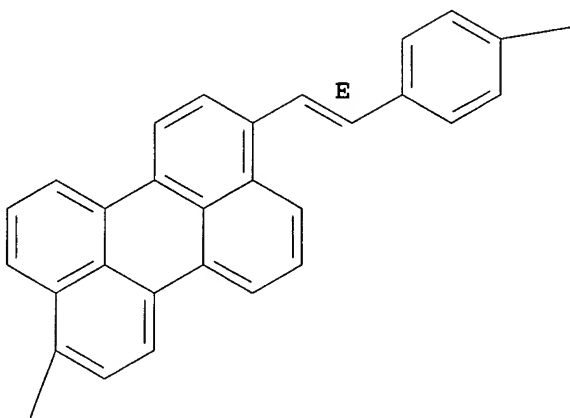


RN 845896-93-7 HCAPLUS

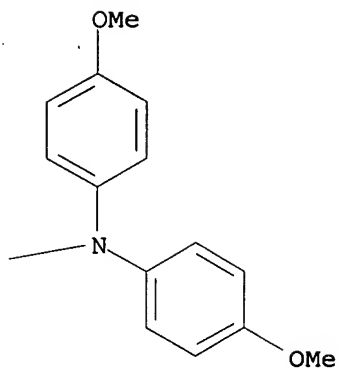
CN Benzenamine, 4,4'-[3,9-perylenediyl-di-(1E)-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

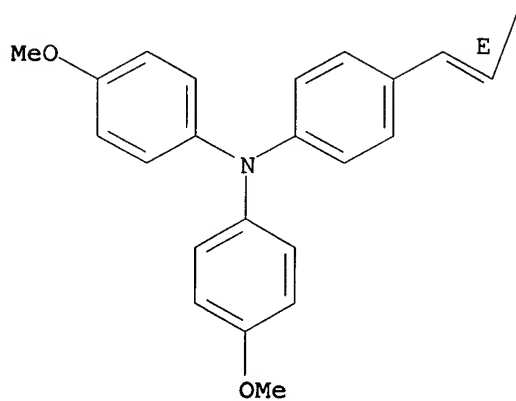
PAGE 1-A



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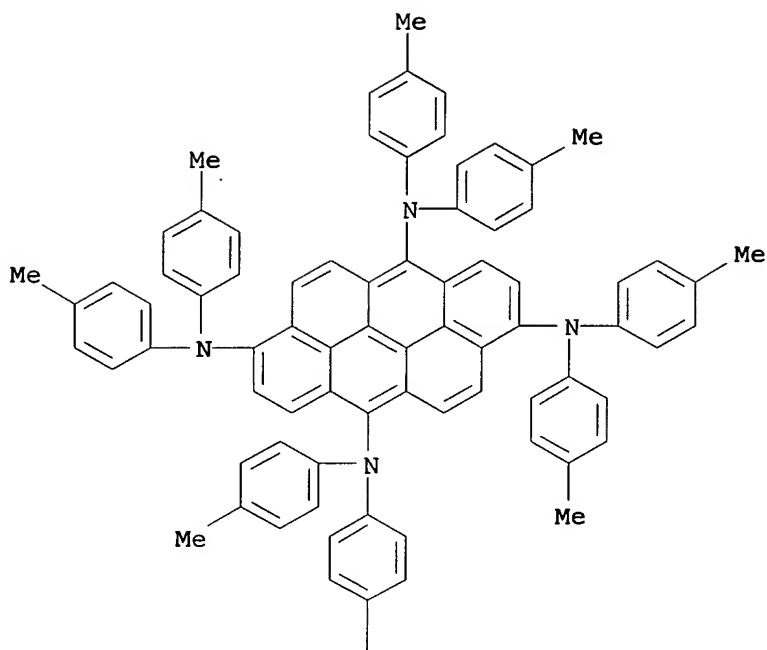


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RN 845896-94-8 HCAPLUS
CN Dibenzo[def,mno]chrysene-3,6,9,12-tetramine,
N,N,N',N',N'',N'',N''',N'''-octakis(4-methylphenyl)- (9CI) (CA
INDEX NAME)

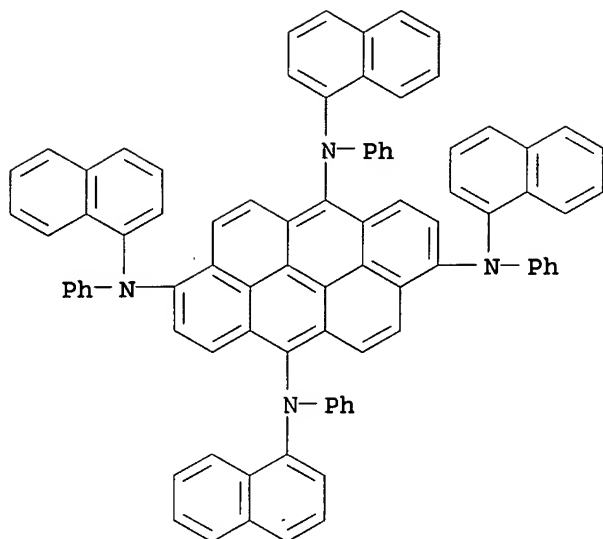
PAGE 1-A



PAGE 2-A

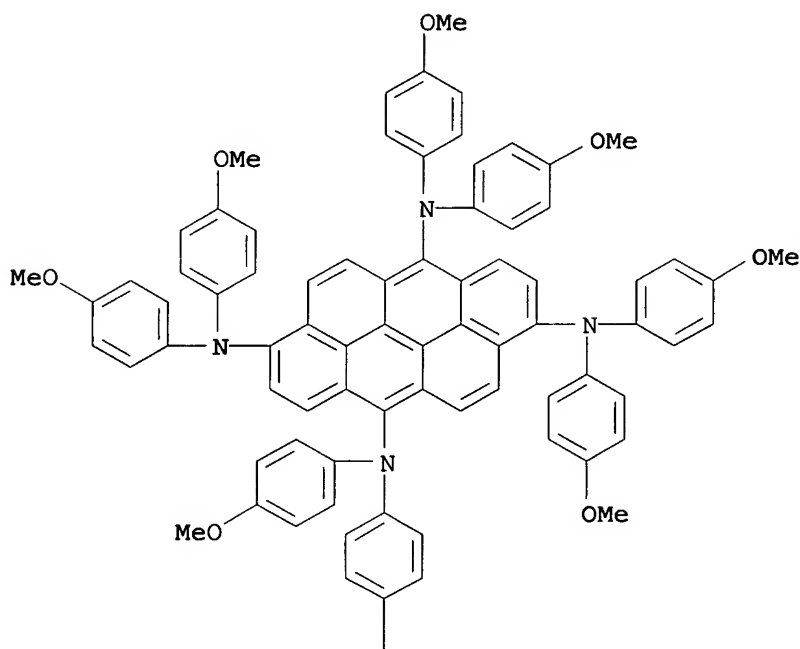


RN 845896-97-1 HCAPLUS
CN Dibenzo[def,mno]chrysene-3,6,9,12-tetramine, N,N',N'',N'''-tetra-1-naphthalenyl-N,N',N'',N'''-tetraphenyl- (9CI) (CA INDEX NAME)



RN 845896-98-2 HCAPLUS
CN Dibenzo[def,mno]chrysene-3,6,9,12-tetramine,
N,N,N',N',N'',N'',N''',N'''-octakis(4-methoxyphenyl)- (9CI) (CA
INDEX NAME)

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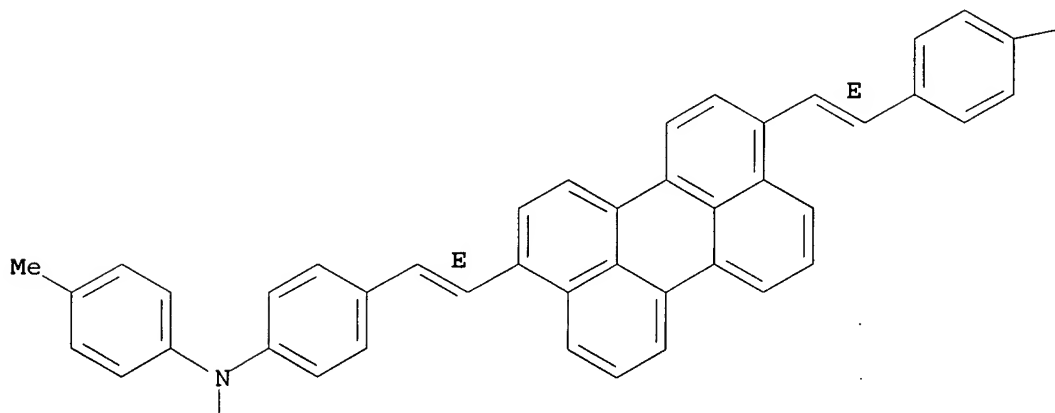
PAGE 2-A

|
OMe

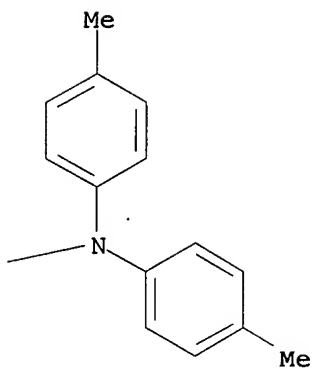
RN 845896-99-3 HCAPLUS
CN Benzenamine, 4,4'-[3,10-perylenediyl-di-(1E)-2,1-ethenediyl]bis[N,N-
bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

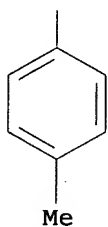
PAGE 1-A



PAGE 1-B



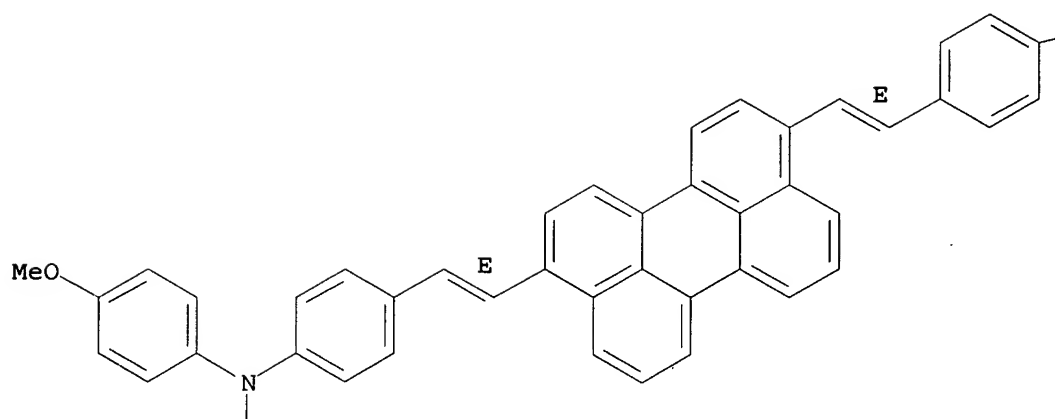
PAGE 2-A



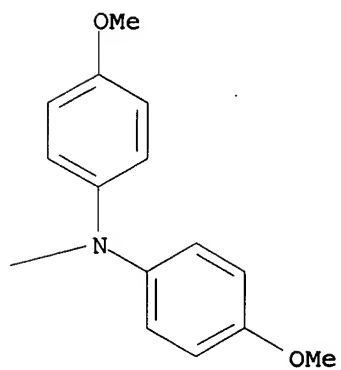
RN 845897-00-9 HCAPLUS
 CN Benzenamine, 4,4'-[3,10-perylenediyl-di-(1E)-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

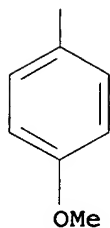
PAGE 1-A



PAGE 1-B

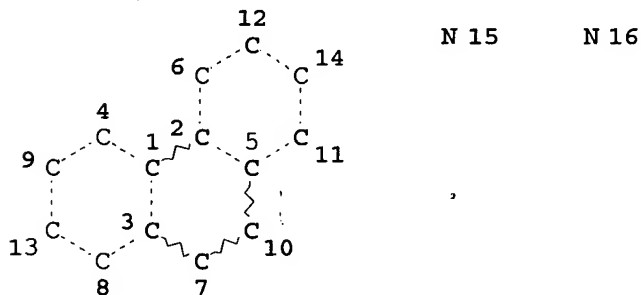


PAGE 2-A



IC ICM H05B033-14
ICS C09K011-06
INCL 428690000; 428917000; 313504000; 313506000; 252301160
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
IT 845896-91-5P 845896-93-7P 845896-94-8P
845896-97-1P 845896-98-2P 845896-99-3P
845897-00-9P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fluorescent material, organic electroluminescent element and organic electroluminescent display using perylene and anthanthrene derivs.)

=> => d que stat 1134
L11 SCR 1841 AND 1993
L27 STR

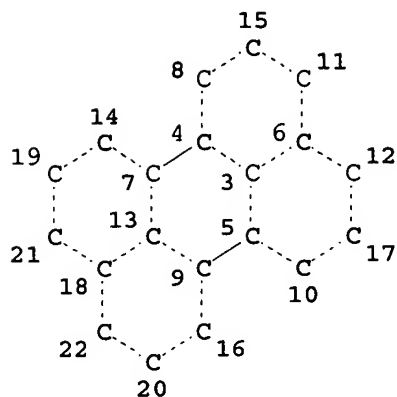


NODE ATTRIBUTES:
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NSPEC IS RC AT 16
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
L29 SCR 1918

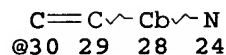
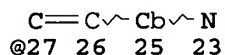
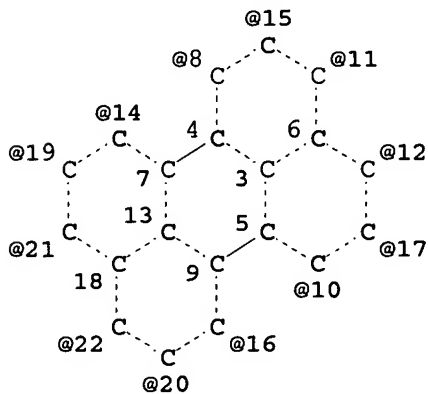
L31 25083 SEA FILE=REGISTRY SSS FUL L27 AND L11 NOT L29
 L35 STR



NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RSPEC I
 NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE
 L42 432 SEA FILE=REGISTRY SUB=L31 SSS FUL L35
 L46 STR



VPA 27-14/19/21/22/20/16 U

VPA 30-8/15/11/12/17/10 U

NODE ATTRIBUTES:

NSPEC IS RC AT 23

NSPEC IS RC AT 24

DEFAULT MLEVEL IS ATOM

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DEFAULT ECLEVEL IS LIMITED

ECOUNT IS E6 C AT 25

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GRAPH ATTRIBUTES:

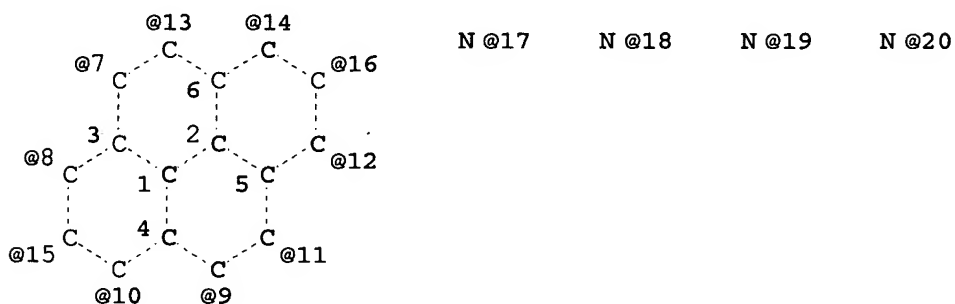
RSPEC I

NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE

L48 4 SEA FILE=REGISTRY SUB=L42 SSS FUL L46

L50 STR



VPA 17-7/8/15 U

VPA 18-9/10 U

VPA 19-13/14/16 U

VPA 20-11/12 U

NODE ATTRIBUTES:

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NSPEC IS RC AT 18

NSPEC IS RC AT 19

NSPEC IS RC AT 20

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

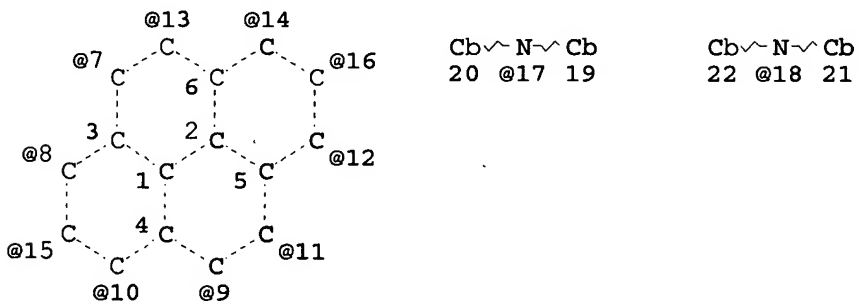
RSPEC 1

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L52 45 SEA FILE=REGISTRY SUB=L31 SSS FUL L50

L53 STR



VPA 17-7/8/15/10/9 U

VPA 18-11/12/16/14/13 U

NODE ATTRIBUTES:

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 DEFAULT MLEVEL IS ATOM
 GGCAT IS UNS AT 19
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

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 NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

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 L66 1 SEA FILE=REGISTRY ABB=ON PLU=ON 845896-97-1/RN
 L67 1 SEA FILE=REGISTRY ABB=ON PLU=ON 845896-98-2/RN
 L68 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L48
 L69 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L56
 L70 38 SEA FILE=HCAPLUS ABB=ON PLU=ON L57
 L75 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L65
 L76 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L66
 L77 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L67
 L78 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L65 AND L66 AND L67
 L79 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L68 OR L69 OR L78
 L80 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L68 AND L78
 L81 7 SEA FILE=REGISTRY ABB=ON PLU=ON L48 OR L65 OR L66 OR
 L67
 L86 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L81
 L93 40 SEA FILE=HCAPLUS ABB=ON PLU=ON (L68 OR L69 OR L70)
 OR (L75 OR L76 OR L77 OR L78 OR L79 OR L80) OR L86
 L94 424974 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUORES?
 L95 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L94 AND L93
 L133 40 SEA FILE=HCAPLUS ABB=ON PLU=ON L95 OR L93
 L134 39 SEA FILE=HCAPLUS ABB=ON PLU=ON L133 NOT (L68 OR L78
 OR L86)

=> => d l134 1-39 cbib abs hitstr hitind

L134 ANSWER 1 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:962579 Document No. 143:256816 White organic
 electroluminescence device. Tokairin, Hiroshi; Fukuoka, Kenichi;
 Kubota, Mineyuki; Funahashi, Masakazu (Idemitsu Kosan Co., Ltd.,
 Japan). PCT Int. Appl. WO 2005081587 A1 20050901, 63 pp.
 DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR,
 BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
 EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
 KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
 MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,
 SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
 VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY,
 DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE,
 NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.

APPLICATION: WO 2005-JP2442 20050217. PRIORITY: JP 2004-42694 20040219.

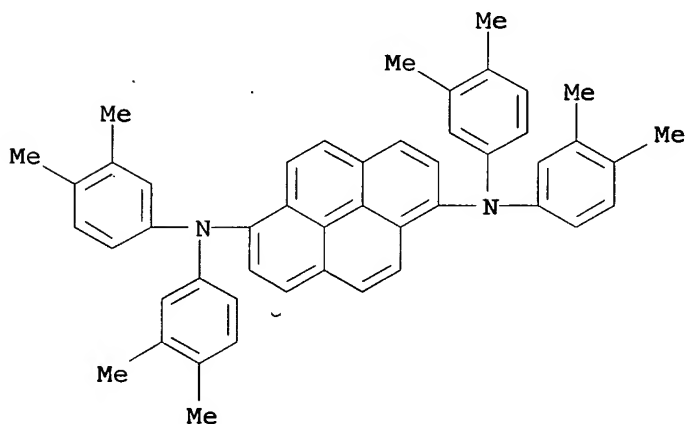
AB The invention refers to a white organic electroluminescence device comprising a neg. electrode and a pos. electrode and, interposed there between, one or more organic thin film layers including at least a light emitting layer, wherein the light emitting layer is constituted of a laminate of blue color light emitting layer and yellow-to-red color light emitting layer and contains an asym. condensed-ring-containing compound. This white color organic electroluminescence device realizes reduced chromaticity changes and excels in luminous efficiency and thermal stability, ensuring strikingly prolonged service life.

IT 764657-26-3

RL: DEV (Device component use); USES (Uses)
(white color organic electroluminescence device)

RN 764657-26-3 HCAPLUS

CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(3,4-dimethylphenyl)- (9CI)
(CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 154853-83-5 331965-31-2 667940-34-3 667940-36-5

764657-26-3 853945-27-4 853945-29-6 853945-34-3

855828-33-0 863292-27-7 863292-28-8 863292-29-9

RL: DEV (Device component use); USES (Uses)

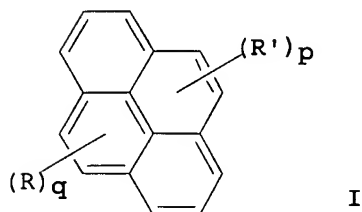
(white color organic electroluminescence device)

L134 ANSWER 2 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:799549 Document No. 141:304000 Process for preparation of 1,6-bis(diphenylamino)pyrene derivatives as electroluminescent devices. Funahashi, Masakazu (Idemitsu Kosan Co. Ltd., Japan). PCT Int. Appl. WO 2004083162 A1 20040930, 51 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,

MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP2945 20040308. PRIORITY: JP 2003-76772 20030320.

GI



AB This invention pertains to a method for producing (diphenylamino)pyrene derivs. I [wherein R = H, (un)substituted alkyl, aryl, aralkyl, etc.; R' = (un)substituted diphenylamino; q = 1-9; p = 1-9; with limitation of p + q < 10], which are useful as electroluminescent devices. For example, 1,6-dibromopyrene was reacted with 4-isopropyldiphenylamine in toluene in the presence of Pd(OAc)₂, t-Bu₃P, and t-BuONa to give 1,6-bis(4-isopropyldiphenylamino)pyrene. I were tested as organic electroluminescent devices which have a long life and emit a blue color at a high luminescence efficiency.

IT 722498-84-2P 764657-23-0P 764657-24-1P

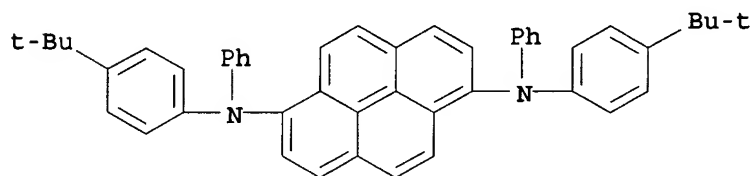
764657-25-2P 764657-26-3P 764657-27-4P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of bis(diphenylamino)pyrene derivs. as electroluminescent devices)

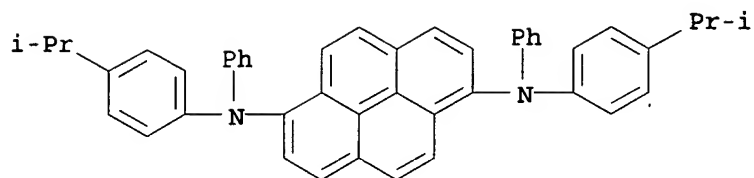
RN 722498-84-2 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

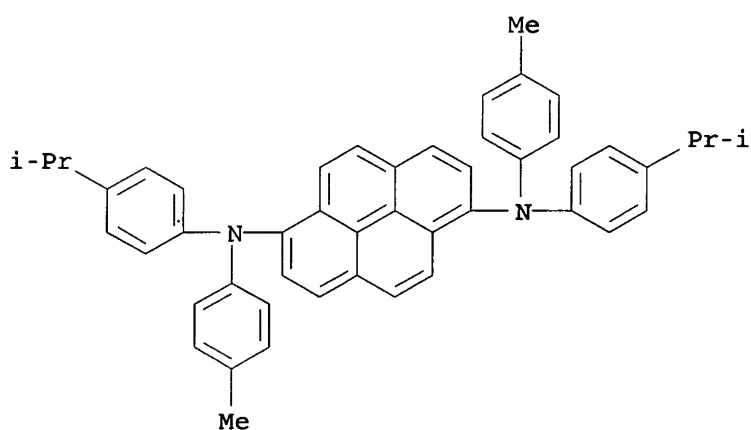


RN 764657-23-0 HCAPLUS

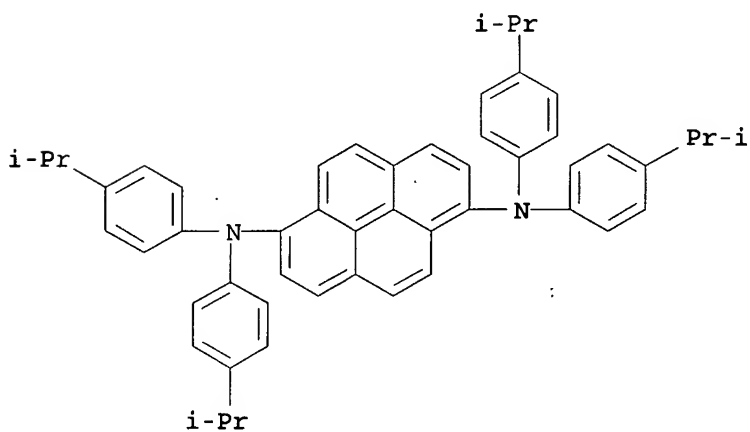
CN 1,6-Pyrenediamine, N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



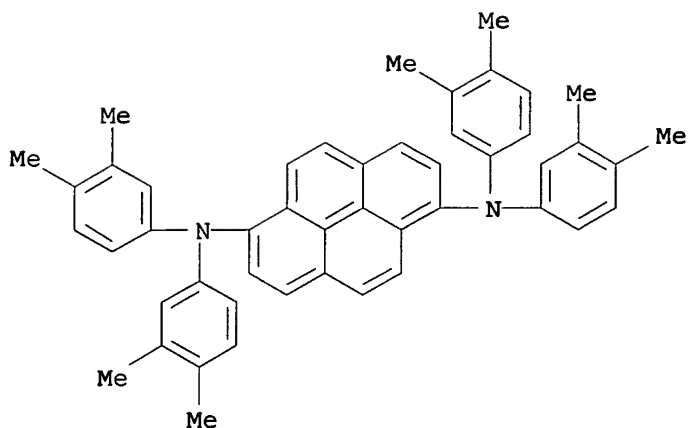
RN 764657-24-1 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis[4-(1-methylethyl)phenyl]-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



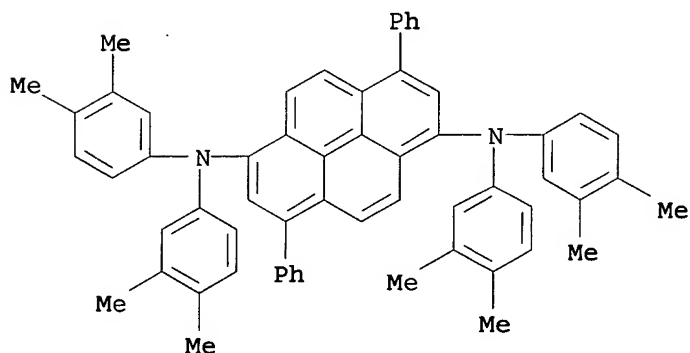
RN 764657-25-2 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 764657-26-3 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(3,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



RN 764657-27-4 HCAPLUS
 CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(3,4-dimethylphenyl)-3,8-diphenyl- (9CI) (CA INDEX NAME)

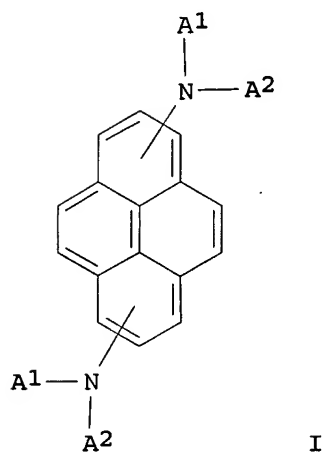


IC ICM C07C211-61
 ICS H05B033-14
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25
 IT 722498-84-2P 764657-23-0P 764657-24-1P
 764657-25-2P 764657-26-3P 764657-27-4P
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation);
 PREP (Preparation)
 (preparation of bis(diphenylamino)pyrene derivs. as electroluminescent devices)

L134 ANSWER 3 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:568210 Document No. 141:131023 Organic electroluminescent devices employing blue-emitting dopants based on amine derivatives of pyrene. Seo, Jeong Dae; Lee, Kyung Hoon; Kim, Hee Jung; Park, Chun Gun; Oh, Hyoung Yun (Lg Electronics Inc., S. Korea). Eur.

Pat. Appl. EP 1437395 A2 20040714, 43 pp. DESIGNATED STATES: R:
 AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK.
 (English). CODEN: EPXXDW. APPLICATION: EP 2003-29661 20031223.
 PRIORITY: KR 2002-83279 20021224; KR 2003-20465 20030401.

GI



AB Organic electroluminescent devices are described which comprise a substrate; a first and second electrodes formed on the substrate; an emitting layer formed between the first electrode and the second electrode, the emitting layer having a plurality of materials one of which being a blue-emitting dopant with general formula (I), where at least one of A1 and A2 is selected from a substituted or non-substituted aromatic group, a heterocyclic group, an aliphatic group and hydrogen. The materials forming the emitting layer together with the material of I may have a chemical formula B1-X-B2 where X is selected from a group consisting of naphthalene, anthracene, phenanthrene, pyrene, perylene, and quinoline and at least 1 of the B1 and B2 is selected from a group consisting of aryl, alkylaryl, alkoxyaryl, arylaminoaryl and alkylaminoaryl.

IT 76656-51-4 143141-30-4 163969-53-7
 663954-33-4 668019-96-3 722498-77-3
 722498-78-4 722498-79-5 722498-80-8
 722498-81-9 722498-82-0 722498-83-1
 722498-84-2 722498-85-3 722498-86-4
 722498-87-5 722498-89-7 722498-90-0
 722498-91-1 722498-92-2 722498-93-3
 722498-94-4 722498-95-5 722498-97-7
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 722499-19-6 722499-20-9 722499-21-0
 722499-22-1 722499-23-2 722499-24-3
 722499-27-6 722499-30-1 722499-31-2

722499-32-3 722499-33-4 722499-34-5
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722499-48-1 722499-49-2

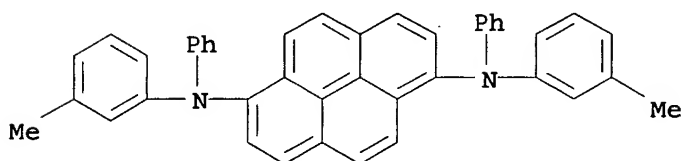
RL: DEV (Device component use); MOA (Modifier or additive use);

USES (Uses)

(blue-emitting dopant; organic electroluminescent devices
employing blue-emitting dopants based on amine derivs. of
pyrene)

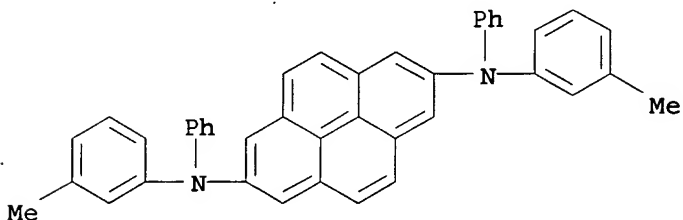
RN 76656-51-4 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



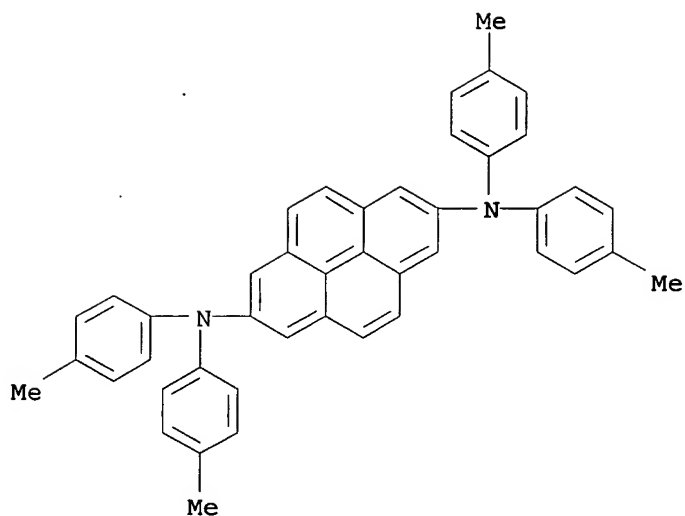
RN 143141-30-4 HCAPLUS

CN 2,7-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)

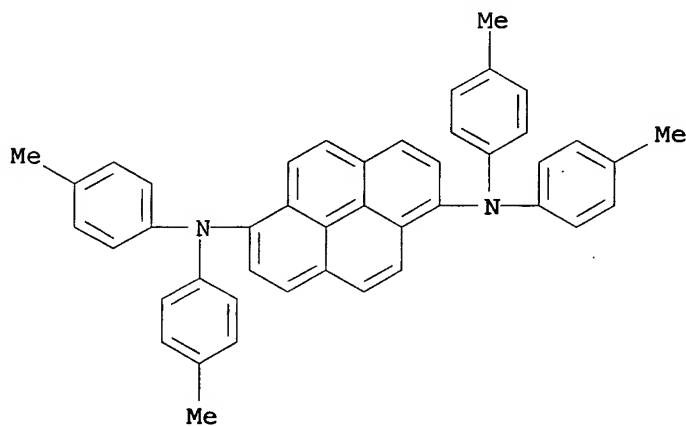


RN 163969-53-7 HCAPLUS

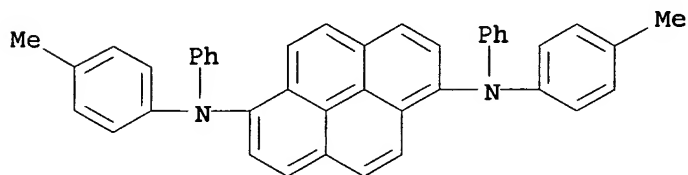
CN 2,7-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA
INDEX NAME)



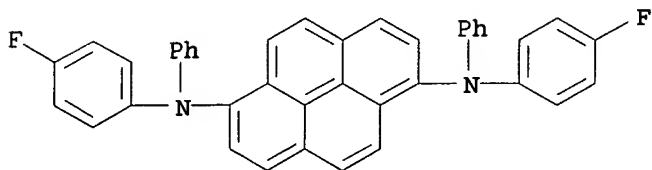
RN 663954-33-4 HCAPLUS
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 INDEX NAME)



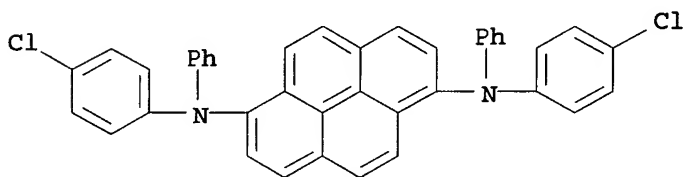
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 CN 1,6-Pyrenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



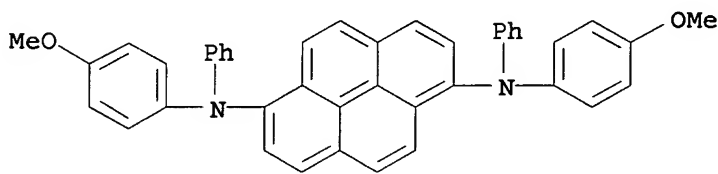
RN 722498-77-3 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis(4-fluorophenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



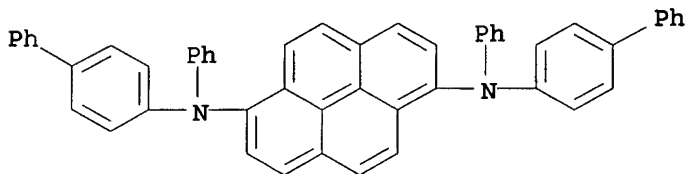
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CN 1,6-Pyrenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



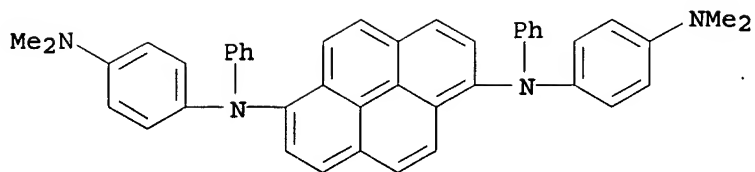
RN 722498-79-5 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis(4-methoxyphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



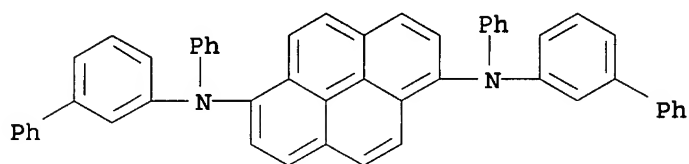
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(9CI) (CA INDEX NAME)



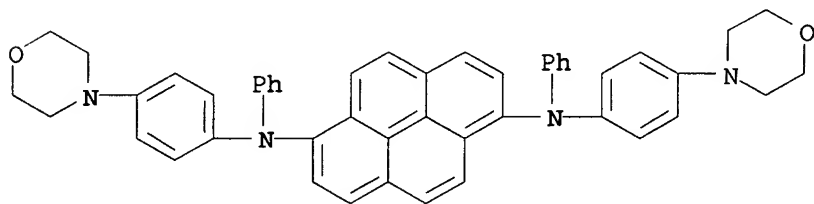
RN 722498-81-9 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis[4-(dimethylamino)phenyl]-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



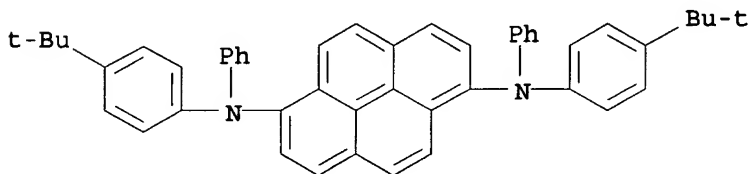
RN 722498-82-0 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-bis[1,1'-biphenyl]-3-yl-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)



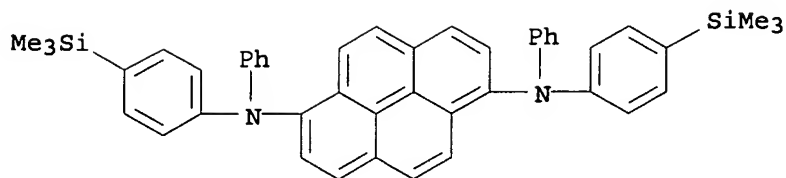
RN 722498-83-1 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-bis[4-(4-morpholinyl)phenyl]-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)



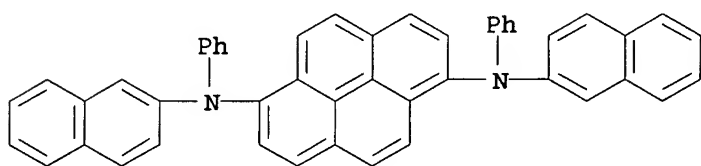
RN 722498-84-2 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-
 diphenyl- (9CI) (CA INDEX NAME)



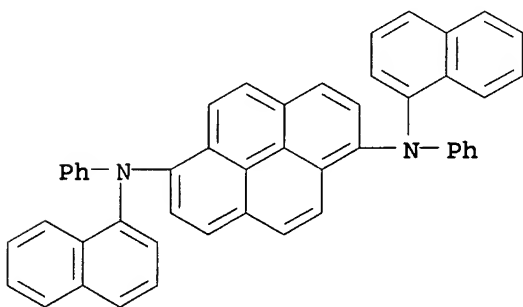
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 CN 1,6-Pyrenediamine, N,N'-diphenyl-N,N'-bis[4-(trimethylsilyl)phenyl]- (9CI) (CA INDEX NAME)



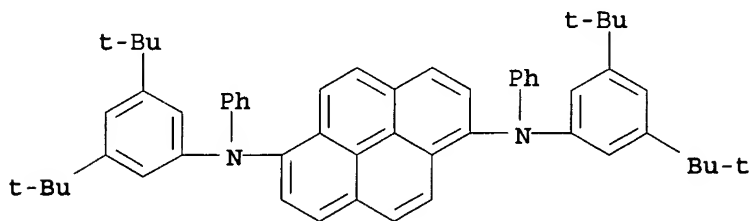
RN 722498-86-4 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-di-2-naphthalenyl-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



RN 722498-87-5 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)

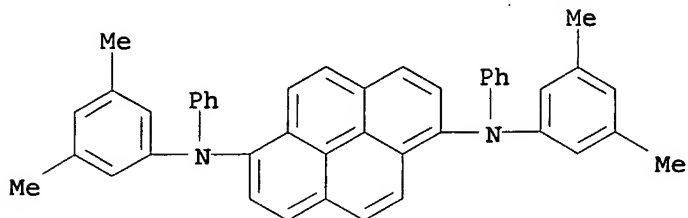


RN 722498-89-7 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-bis[3,5-bis(1,1-dimethylethyl)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

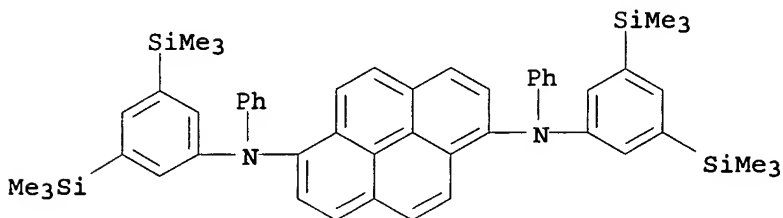


RN 722498-90-0 HCAPLUS

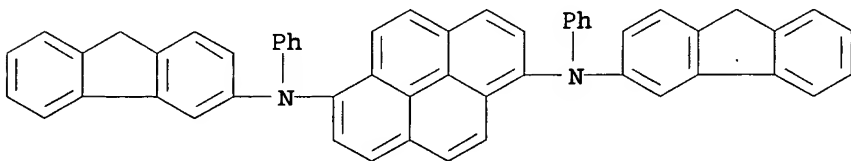
CN 1,6-Pyrenediamine, N,N'-bis(3,5-dimethylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



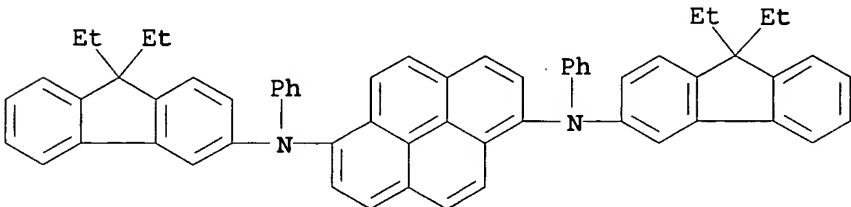
RN 722498-91-1 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis[3,5-bis(trimethylsilyl)phenyl]-N,N'-
diphenyl- (9CI) (CA INDEX NAME)



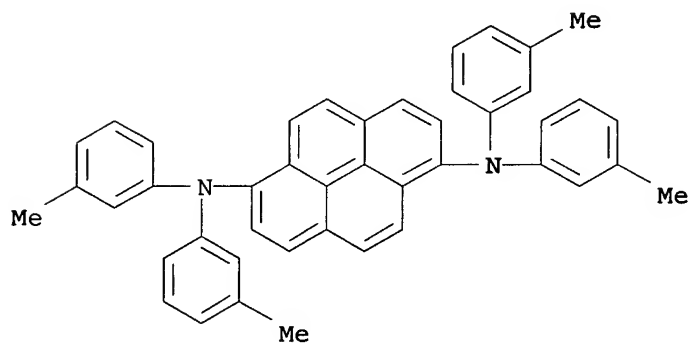
RN 722498-92-2 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-di-9H-fluoren-3-yl-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



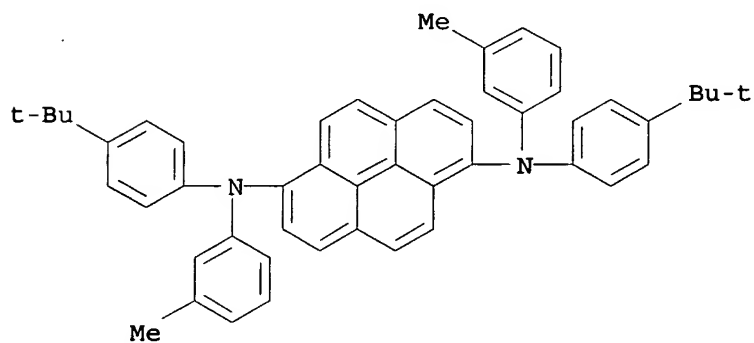
RN 722498-93-3 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis(9,9-diethyl-9H-fluoren-3-yl)-N,N'-
diphenyl- (9CI) (CA INDEX NAME)



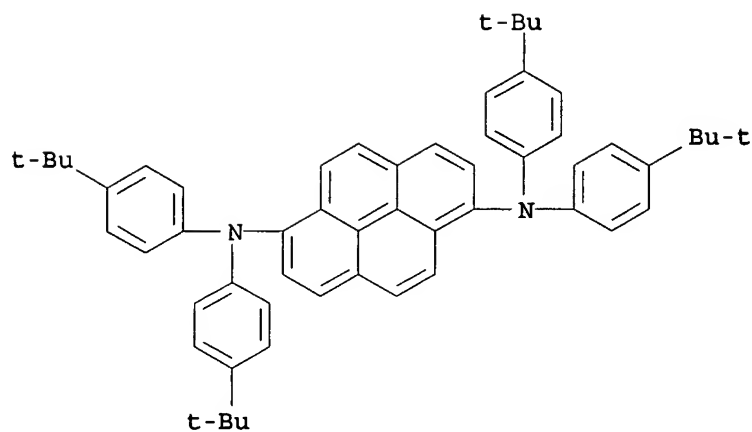
RN 722498-94-4 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



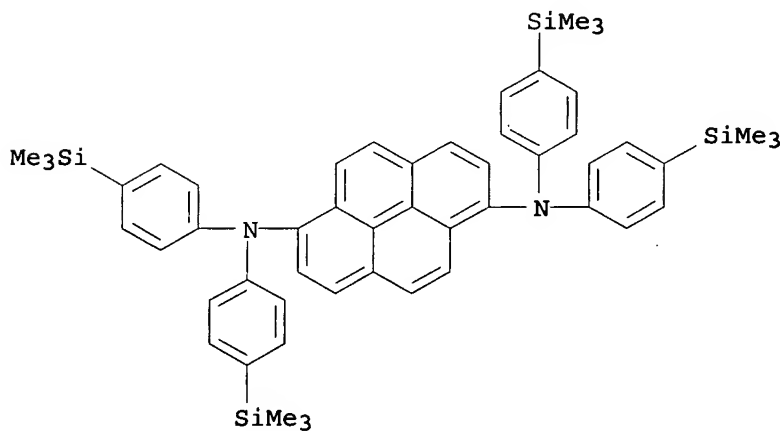
RN 722498-95-5 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



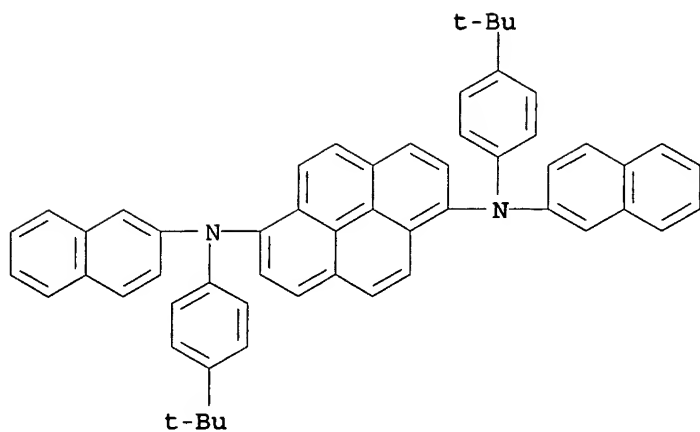
RN 722498-97-7 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)



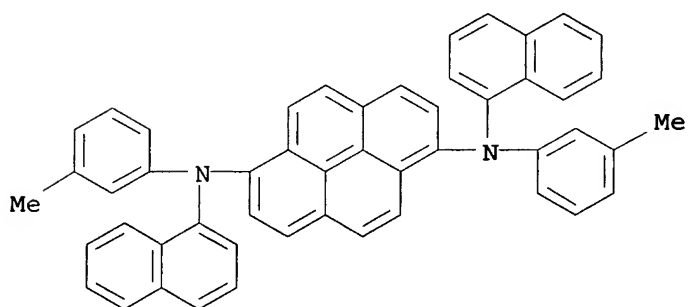
RN 722498-98-8 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis[4-(trimethylsilyl)phenyl]-(9CI) (CA INDEX NAME)



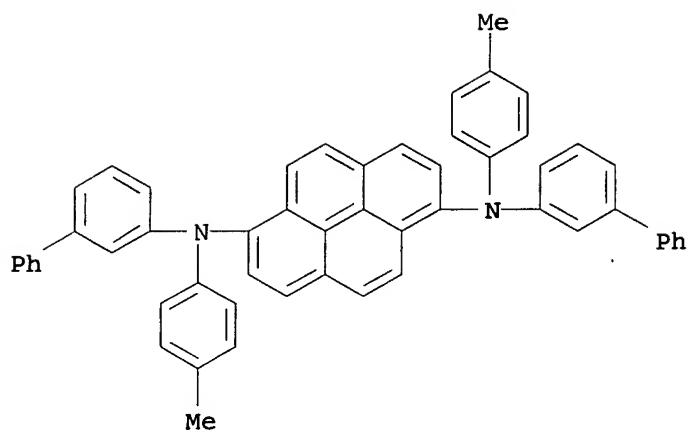
RN 722499-00-5 HCAPLUS
CN 1,6-Pyrenediamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-di-2-naphthalenyl- (9CI) (CA INDEX NAME)



RN 722499-01-6 HCAPLUS
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(9CI) (CA INDEX NAME)

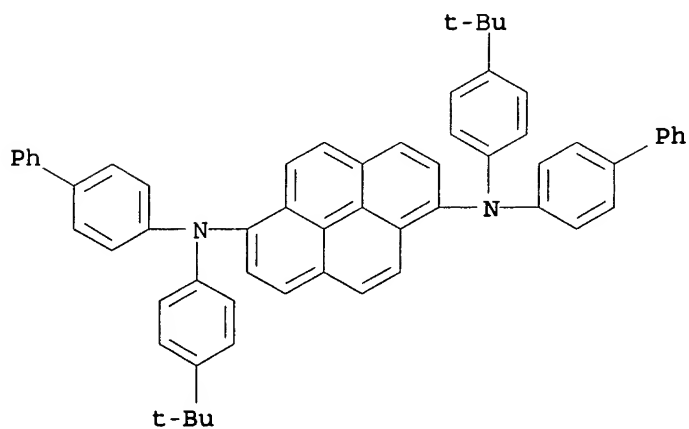


RN 722499-04-9 HCAPLUS
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methylphenyl)- (9CI) (CA INDEX NAME)



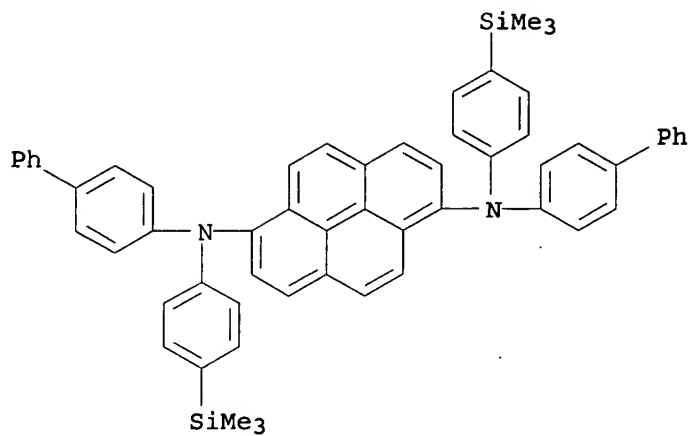
RN 722499-05-0 HCAPLUS

CN 1,6-Pyrenediimine, N,N'-bis[1,1'-biphenyl]-4-yl-N,N'-bis[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

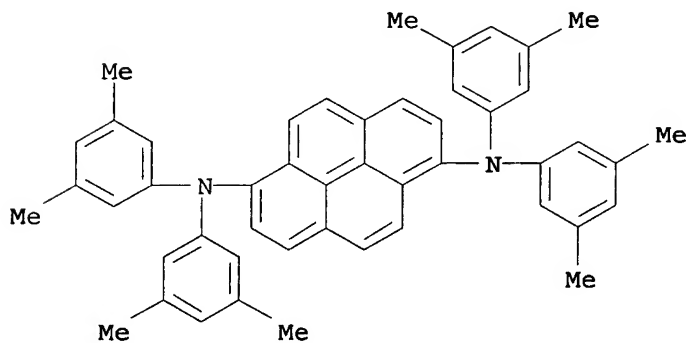


RN 722499-06-1 HCAPLUS

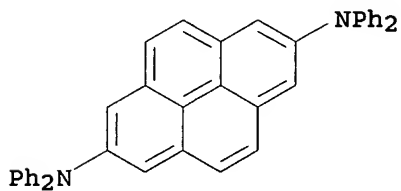
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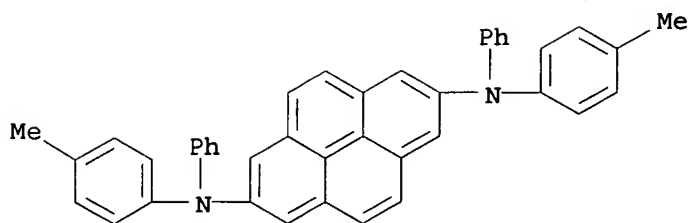
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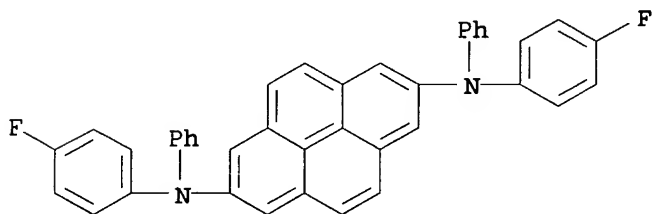
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 CN 2,7-Pyrenediimine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



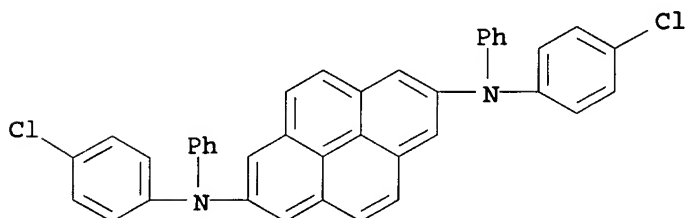
RN 722499-15-2 HCAPLUS
 CN 2,7-Pyrenediimine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



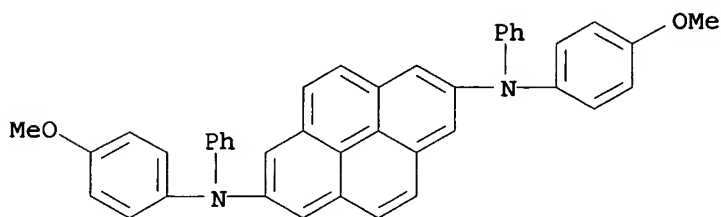
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CN 2,7-Pyrenediamine, N,N'-bis(4-fluorophenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



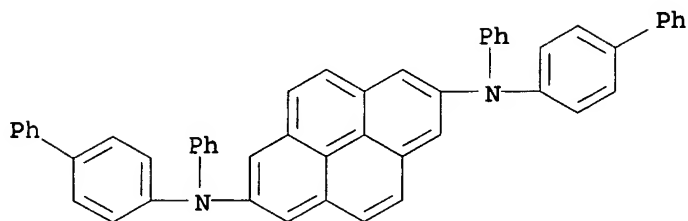
RN 722499-17-4 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis(4-chlorophenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



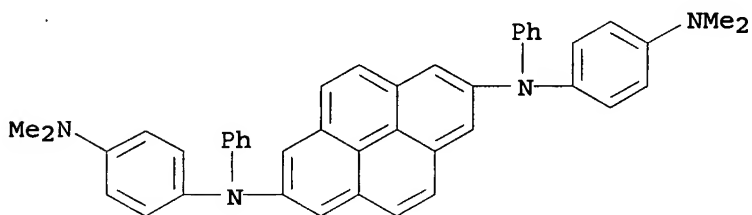
RN 722499-18-5 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis(4-methoxyphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



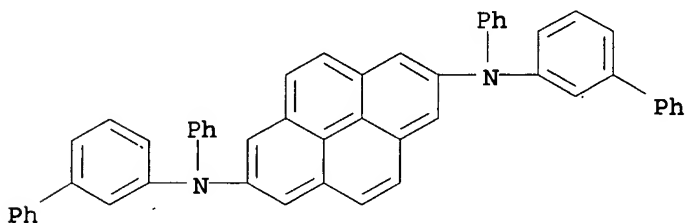
RN 722499-19-6 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis[1,1'-biphenyl]-4-yl-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



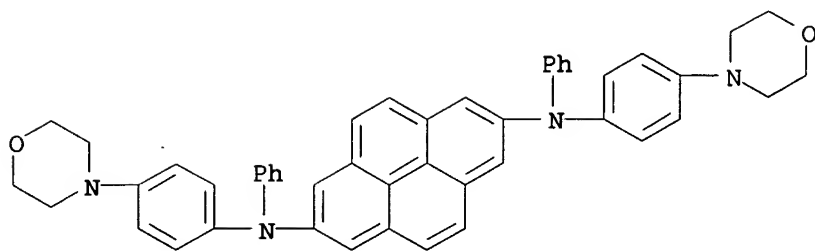
RN 722499-20-9 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis[4-(dimethylamino)phenyl]-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



RN 722499-21-0 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis[1,1'-biphenyl]-3-yl-N,N'-diphenyl-
(9CI) (CA INDEX NAME)

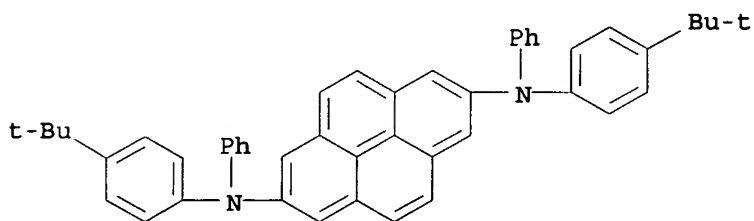


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CN 2,7-Pyrenediamine, N,N'-bis[4-(4-morpholinyl)phenyl]-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



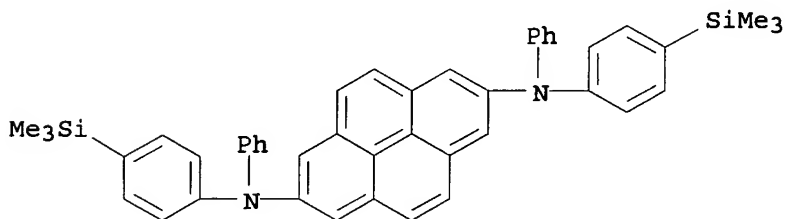
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CN 2,7-Pyrenediimine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



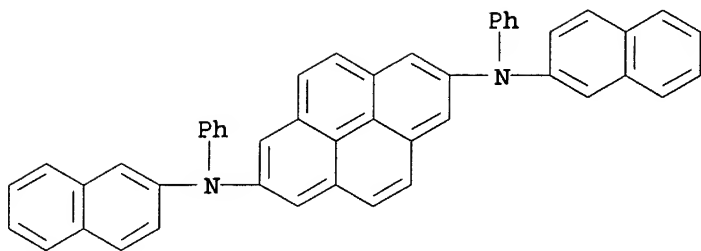
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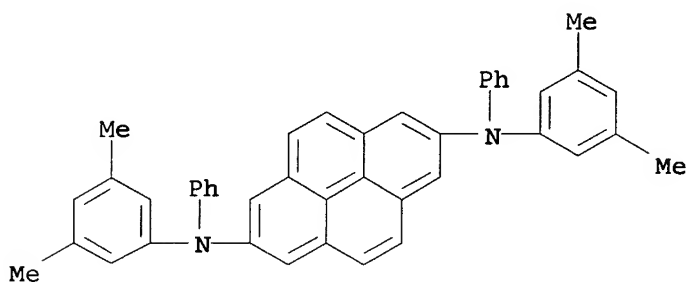


RN 722499-27-6 HCAPLUS

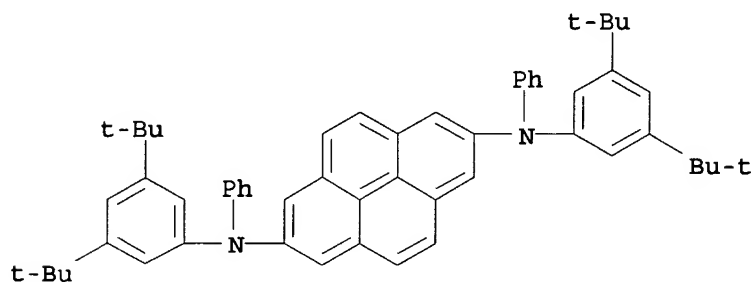
CN 2,7-Pyrenediimine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



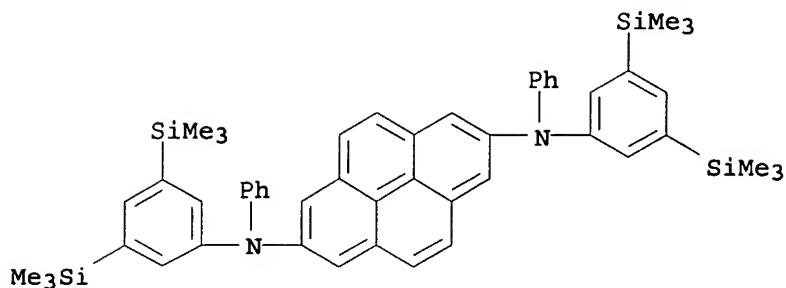
RN 722499-30-1 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis(3,5-dimethylphenyl)-N,N'-diphenyl-
(9CI) (CA INDEX NAME)



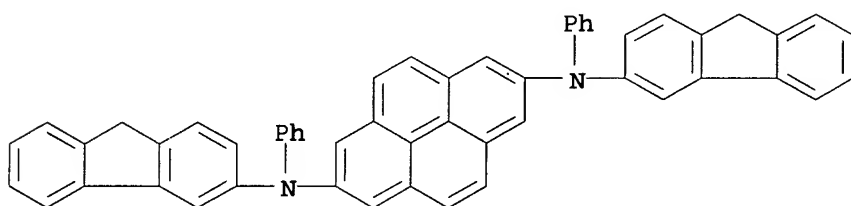
RN 722499-31-2 HCAPLUS
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diphenyl- (9CI) (CA INDEX NAME)



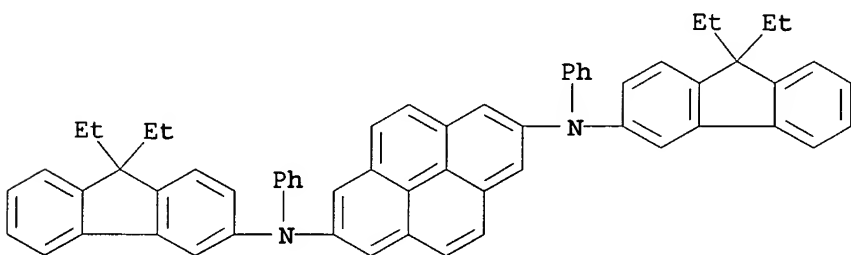
RN 722499-32-3 HCAPLUS
CN 2,7-Pyrenediamine, N,N'-bis[3,5-bis(trimethylsilyl)phenyl]-N,N'-
diphenyl- (9CI) (CA INDEX NAME)



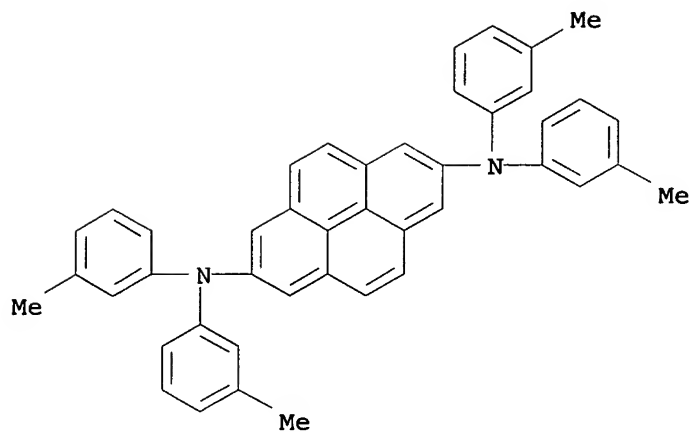
RN 722499-33-4 HCAPLUS
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 (CA INDEX NAME)



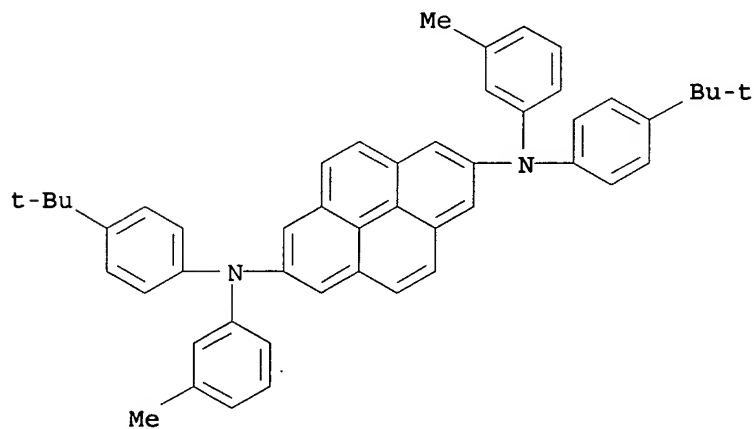
RN 722499-34-5 HCAPLUS
 CN 2,7-Pyrenediamine, N,N'-bis(9,9-diethyl-9H-fluoren-3-yl)-N,N'-
 diphenyl- (9CI) (CA INDEX NAME)



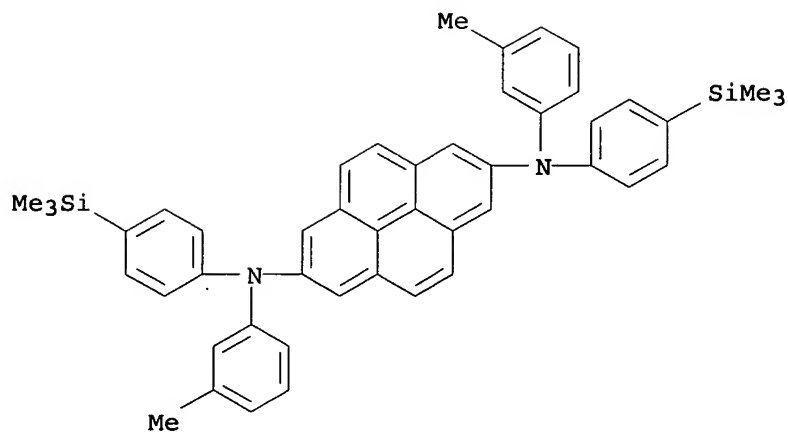
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 INDEX NAME)



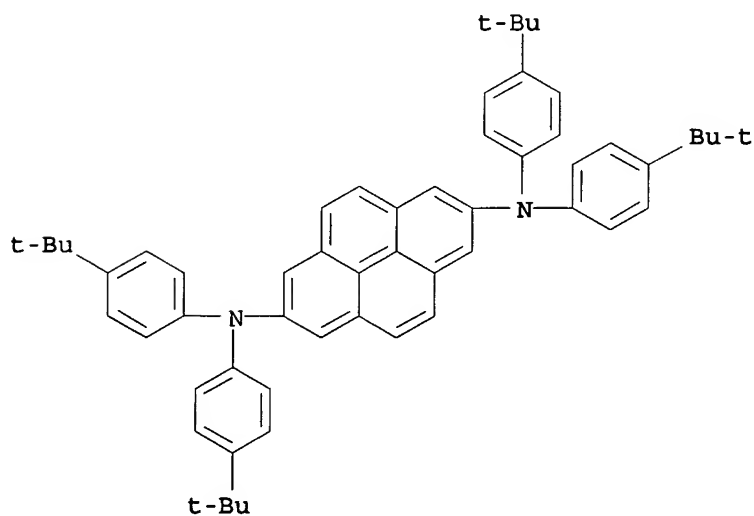
RN 722499-36-7 HCAPLUS
CN 2,7-Pyrenediimine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 722499-37-8 HCAPLUS
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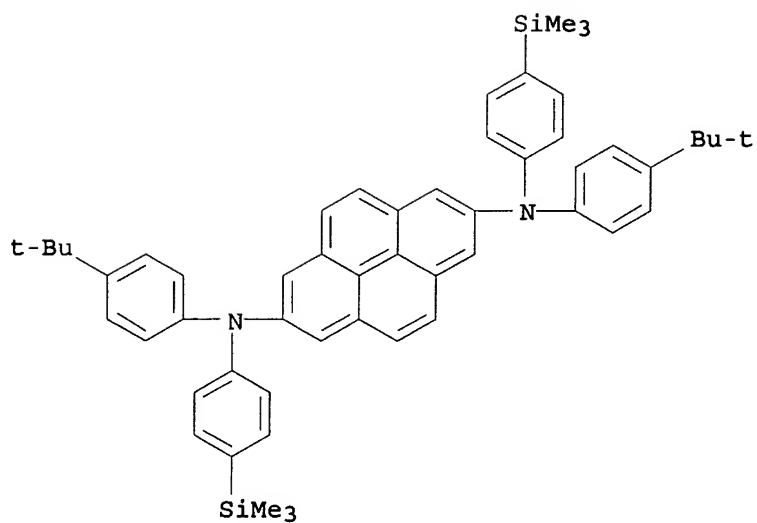


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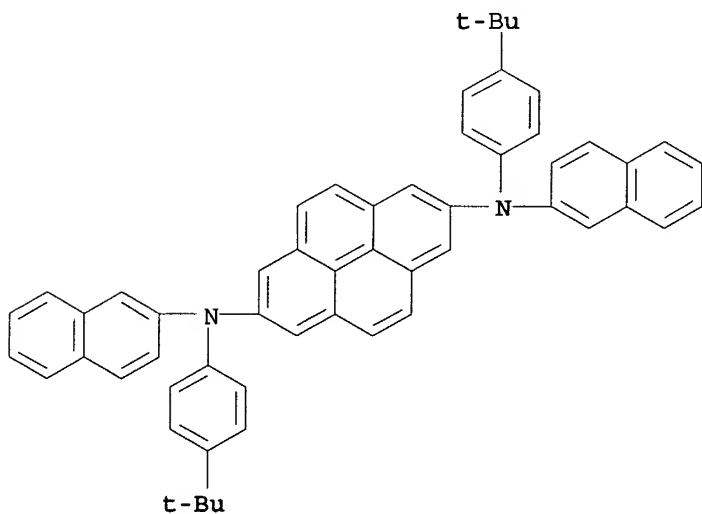
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(9CI) (CA INDEX NAME)

RN 722499-39-0 HCAPLUS

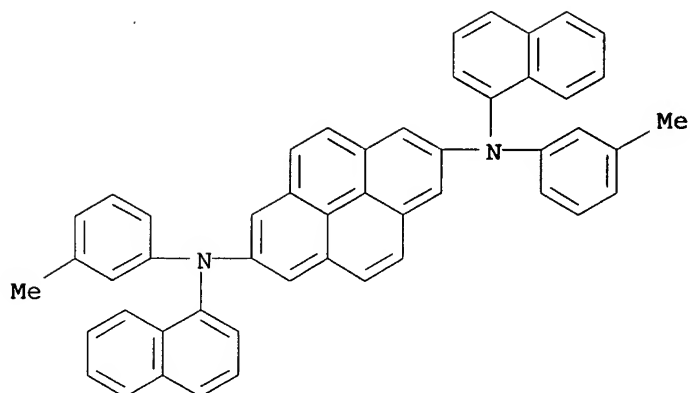
CN 2,7-Pyrenediamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-
bis[4-(trimethylsilyl)phenyl] - (9CI) (CA INDEX NAME)



RN 722499-42-5 HCAPLUS
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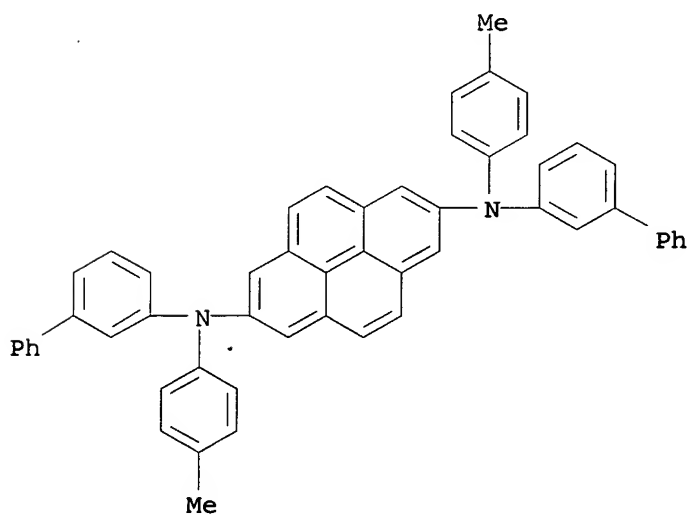


RN 722499-43-6 HCAPLUS
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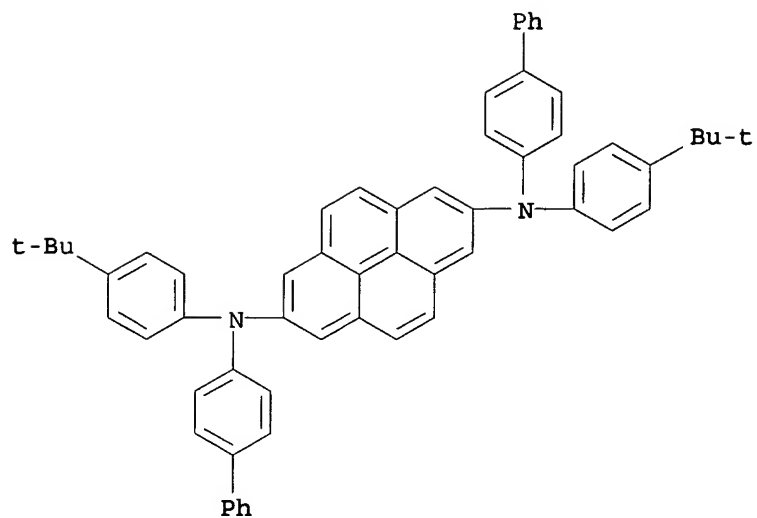
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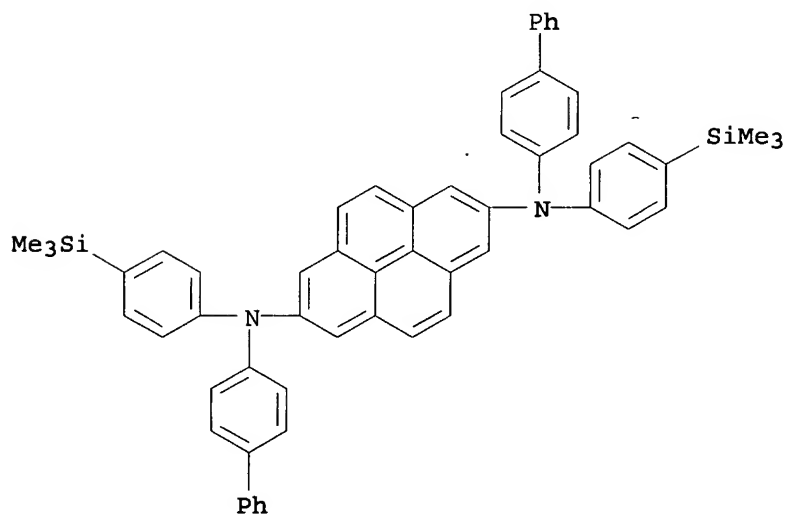


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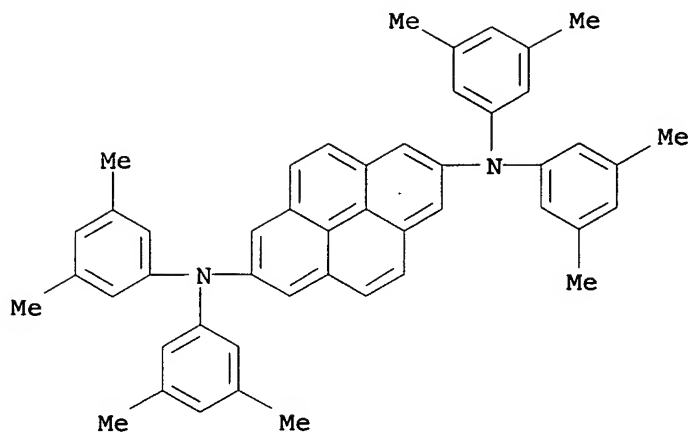
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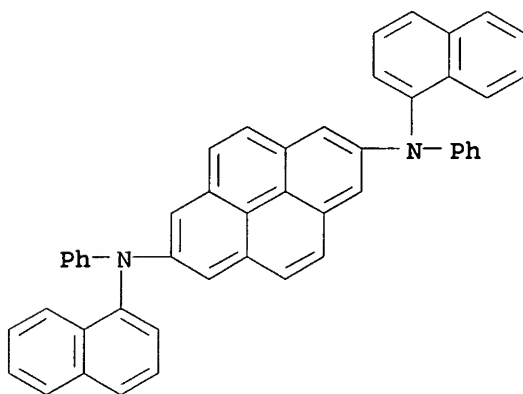
RN 722499-48-1 HCAPLUS
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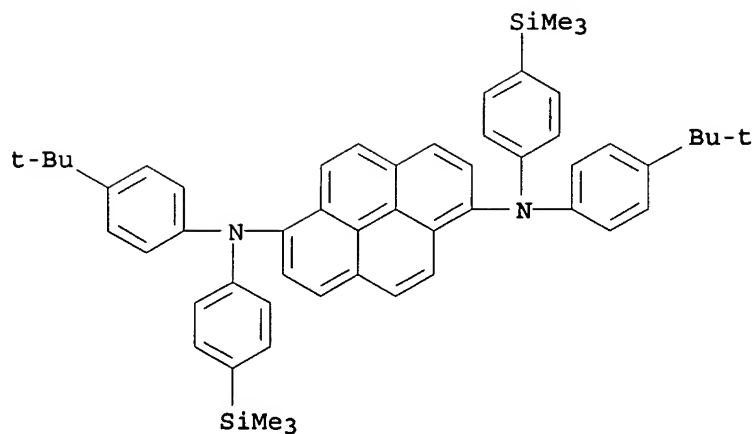
RN 722499-49-2 HCAPLUS
CN 2,7-Pyrenediamine, N,N,N',N'-tetrakis(3,5-dimethylphenyl)- (9CI)
(CA INDEX NAME)



IT 722498-96-6
 RL: DEV (Device component use); MOA (Modifier or additive use);
 PRP (Properties); USES (Uses)
 (blue-emitting dopant; organic electroluminescent devices
 employing blue-emitting dopants based on amine derivs. of
 pyrene)
 RN 722498-96-6 HCAPLUS
 CN 2,7-Pyrenediamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



IT 722498-52-4P
 RL: DEV (Device component use); MOA (Modifier or additive use);
 PRP (Properties); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (blue-emitting dopant; organic electroluminescent devices
 employing blue-emitting dopants based on amine derivs. of
 pyrene)
 RN 722498-52-4 HCAPLUS
 CN 1,6-Pyrenediamine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-
 bis[4-(trimethylsilyl)phenyl]- (9CI) (CA INDEX NAME)

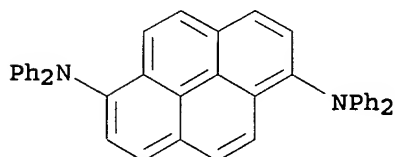


IT 76656-53-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(organic electroluminescent devices employing blue-emitting dopants based on amine derivs. of pyrene)

RN 76656-53-6 HCAPLUS

CN 1,6-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 25, 76

IT 76656-51-4 143141-30-4 163969-53-7

663954-33-4 668019-96-3 722498-76-2

722498-77-3 722498-78-4 722498-79-5

722498-80-8 722498-81-9 722498-82-0

722498-83-1 722498-84-2 722498-85-3

722498-86-4 722498-87-5 722498-88-6

722498-89-7 722498-90-0 722498-91-1

722498-92-2 722498-93-3 722498-94-4

722498-95-5 722498-97-7 722498-98-8

722498-99-9 722499-00-5 722499-01-6

722499-02-7 722499-03-8 722499-04-9

722499-05-0 722499-06-1 722499-07-2

722499-08-3 722499-09-4 722499-10-7 722499-11-8

722499-12-9 722499-13-0 722499-14-1

722499-15-2 722499-16-3 722499-17-4

722499-18-5 722499-19-6 722499-20-9

722499-21-0 722499-22-1 722499-23-2

722499-24-3 722499-25-4 722499-26-5
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 722499-51-6 722499-52-7 722499-53-8 722499-54-9

RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)

(blue-emitting dopant; organic electroluminescent devices
 employing blue-emitting dopants based on amine derivs. of
 pyrene)

IT 722498-96-6

RL: DEV (Device component use); MOA (Modifier or additive use);
 PRP (Properties); USES (Uses)

(blue-emitting dopant; organic electroluminescent devices
 employing blue-emitting dopants based on amine derivs. of
 pyrene)

IT 722498-52-4P 722498-53-5P 722498-55-7P

RL: DEV (Device component use); MOA (Modifier or additive use);
 PRP (Properties); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)

(blue-emitting dopant; organic electroluminescent devices
 employing blue-emitting dopants based on amine derivs. of
 pyrene)

IT 76656-53-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (organic electroluminescent devices employing blue-emitting
 dopants based on amine derivs. of pyrene)

L134 ANSWER 4 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:217178 Document No. 140:261500 Pyrenes as dopants for
~~green-emitting organic~~ electroluminescent devices and displays.
 Toyama, Wataru; Sato, Hiroyuki; Matsuura, Azuma; Narisawa,
 Toshiaki (Fujitsu Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 2004083507 A2 20040318, 43 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2002-248378 20020828.

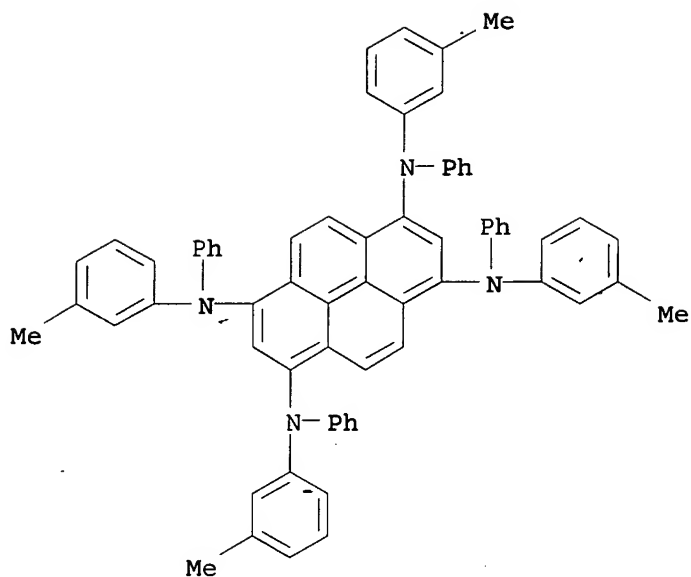
AB The pyrenes have substituents NR1R2 (R1, R2 = H, substituent) on
 position 1, 3, 6, and 8. The devices and displays have high green
 luminescence intensity and efficiency.

IT 671212-46-7P 671212-47-8P 671212-48-9P

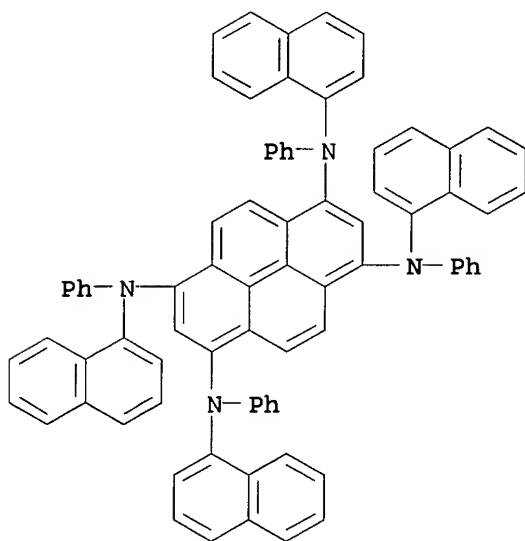
RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (manufacture of 1,3,6,8-substituted pyrenes as dopants for
 green-emitting organic electroluminescent devices and displays)

RN 671212-46-7 HCAPLUS

CN 1,3,6,8-Pyrenetetramine, N,N',N'',N'''-tetrakis(3-methylphenyl)-
 N,N',N'',N'''-tetraphenyl- (9CI) (CA INDEX NAME)

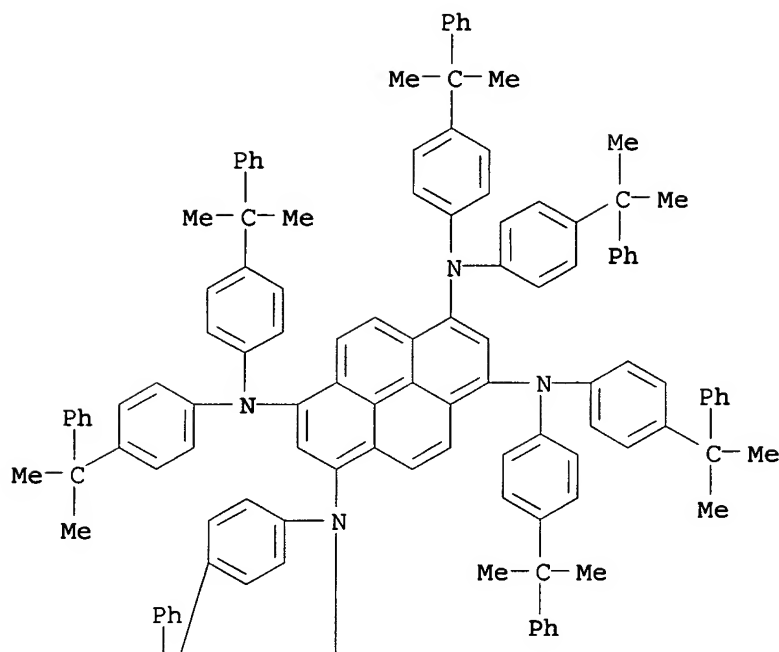


RN 671212-47-8 HCAPLUS
 CN 1,3,6,8-Pyrenetetramine, N,N',N'',N'''-tetra-1-naphthalenyl-N,N',N'',N'''-tetraphenyl- (9CI) (CA INDEX NAME)

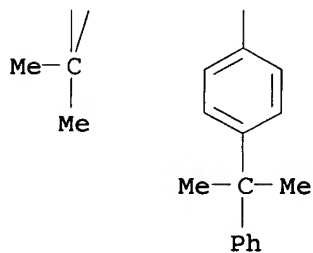


RN 671212-48-9 HCAPLUS
 CN 1,3,6,8-Pyrenetetramine, N,N',N'',N'''-octakis[4-(1-methyl-1-phenylethyl)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07C211-61
 ICS C09K011-06; H05B033-14; H05B033-22
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 25, 73
 IT 671212-46-7P 671212-47-8P 671212-48-9P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (manufacture of 1,3,6,8-substituted pyrenes as dopants for
 green-emitting organic electroluminescent devices and displays)

L134 ANSWER 5 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:198497 Document No. 140:225545 Phenylanthracenes for

blue-emitting organic electroluminescent devices having high luminescent intensity and efficiency. Kawamura, Hisayuki (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004075580 A2 20040311, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-235538 20020813.

AB The phenylanthracenes are A1LA2 (I) (A1, A2 = phenylanthryl, diphenylanthryl; L = C_{≥8} polycyclic alicyclic group; A1 and A2 link via different atoms of L). Organic electroluminescent devices have emitter or hole-transporting layers containing I.

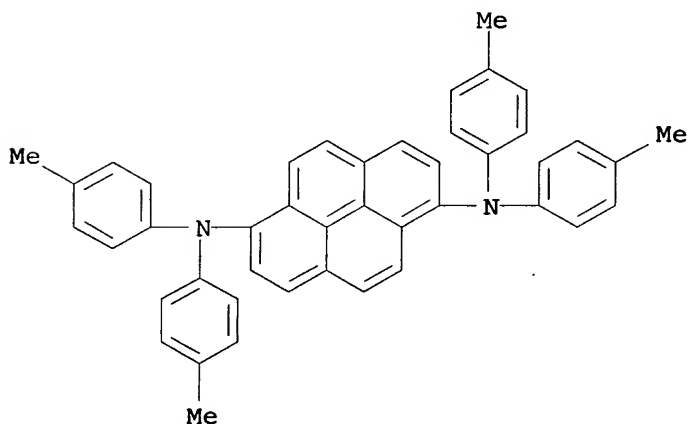
IT 663954-33-4

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(dopants; polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic electroluminescent devices)

RN 663954-33-4 HCAPLUS

CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C013-615

ICS C09K011-06; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

IT 154853-83-5 663954-33-4

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(dopants; polycyclic alicyclic compds. bearing phenylanthracene groups as emitters or hole transporting materials for blue-emitting organic electroluminescent devices)

L134 ANSWER 6 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2004:182957 Document No. 140:243296 Organic electroluminescent devices and organic luminescent medium. Matsuura, Masahide; Funahashi, Masakazu; Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2004018588 A1 20040304, 77 pp. DESIGNATED STATES: W: CN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,

TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP8463
20030703. PRIORITY: JP 2002-211308 20020719.

AB An organic electroluminescent device comprises a pair of electrodes and an organic luminescent medium layer which is placed between the electrodes and contains (A) a specific arylamine and (B) at least one compound selected from among specific anthracene derivs., spiro fluorene derivs., fused-ring compds., and metal complexes; and an organic luminescent medium containing the components (A) and (B). The organic electroluminescent device exhibits high color purity, excellent heat resistance and a long lifetime and emits blue to yellow light at high efficiency, and the organic luminescent medium is suitable for use in such devices.

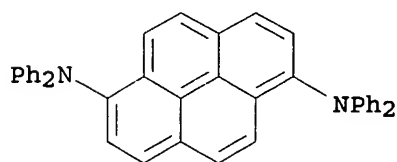
IT 76656-53-6 668019-96-3 668020-20-0
668020-26-6 668020-53-9 668020-61-9

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent devices and organic luminescent medium)

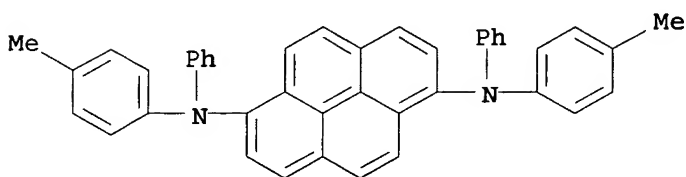
RN 76656-53-6 HCAPLUS

CN 1,6-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



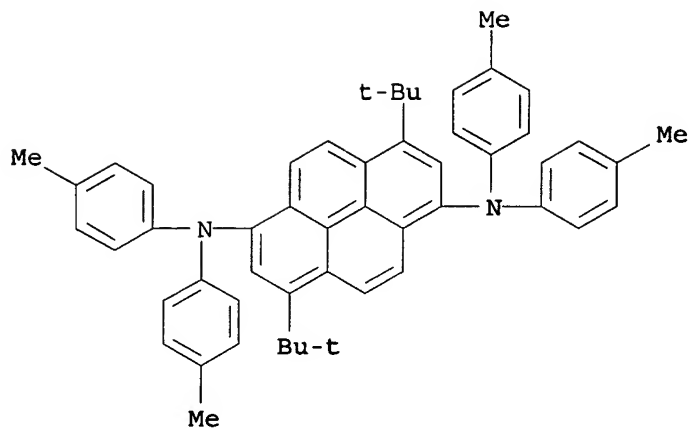
RN 668019-96-3 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)

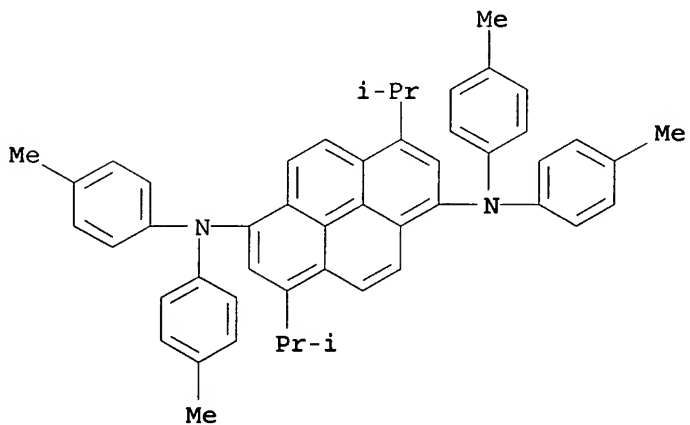


RN 668020-20-0 HCAPLUS

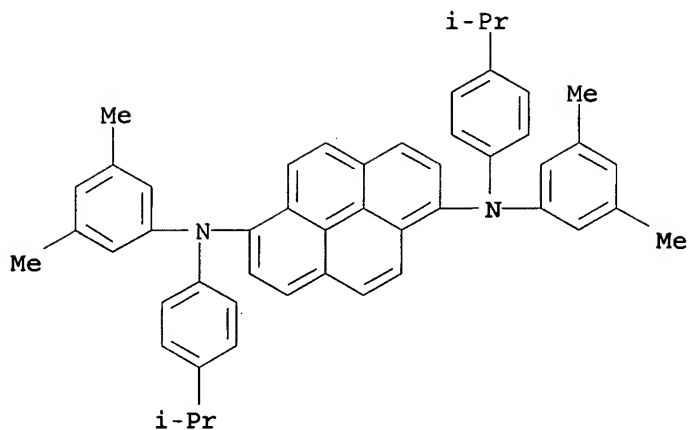
CN 1,6-Pyrenediamine, 3,8-bis(1,1-dimethylethyl)-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



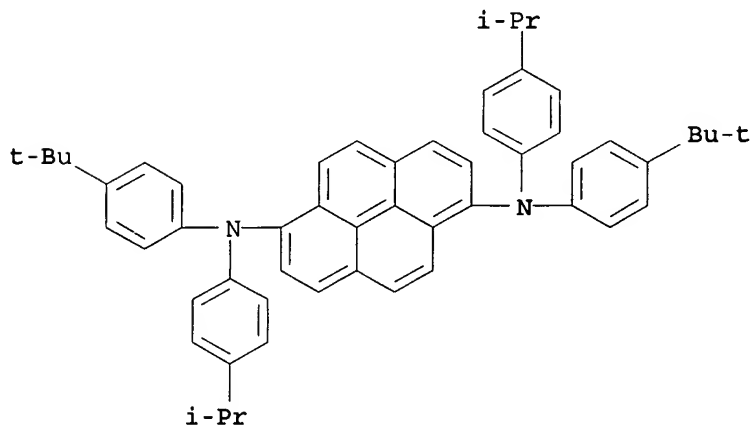
RN 668020-26-6 HCAPLUS
 CN 1,6-Pyrenediimine, 3,8-bis(1-methylethyl)-N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 668020-53-9 HCAPLUS
 CN 1,6-Pyrenediimine, N,N'-bis(3,5-dimethylphenyl)-N,N'-bis[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 668020-61-9 HCAPLUS
 CN 1,6-Pyrenediimine, N,N'-bis[4-(1,1-dimethylethyl)phenyl]-N,N'-bis[4-(1-methylethyl)phenyl]- (9CI) (CA INDEX NAME)

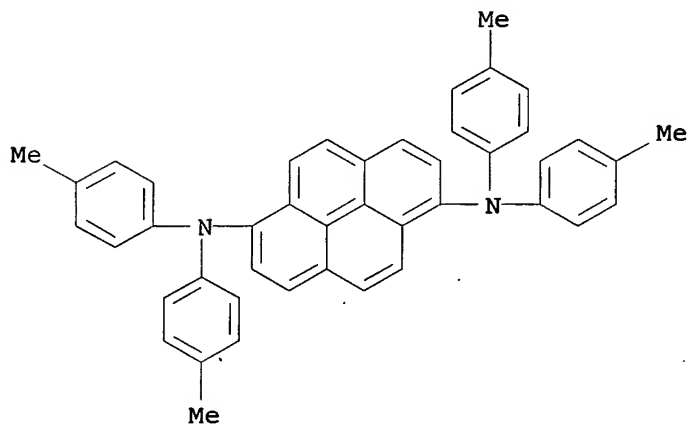


IC ICM C09K011-06
 ICS H05B033-14; H05B033-22
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25, 74
 IT 76656-53-6 122648-99-1 131625-67-7 171408-93-8
 172285-79-9 172285-83-5 220721-68-6 244281-01-4
 279672-22-9 349666-25-7 400606-81-7 475461-15-5
 668019-24-7 668019-64-5 668019-76-9 668019-96-3
 668020-07-3 668020-14-2 668020-20-0
 668020-26-6 668020-28-8 668020-34-6 668020-39-1
 668020-46-0 668020-53-9 668020-61-9
 668020-67-5 668020-74-4 668020-81-3 668020-88-0
 RL: DEV (Device component use); USES (Uses)
 (organic electroluminescent devices and organic luminescent medium)

L134 ANSWER 7 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:162657 Document No. 140:225502 Oligoarylene derivatives for
 organic electroluminescent devices. Ikeda, Hidetsugu; Matsuura,
 Masahide; Kawamura, Hisayuki (Idemitsu Kosan Co., Ltd., Japan).
 PCT Int. Appl. WO 2004016575 A1 20040226, 35 pp. DESIGNATED
 STATES: W: CN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR,
 GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN:
 PIXXD2. APPLICATION: WO 2003-JP10071 20030807. PRIORITY: JP
 2002-234833 20020812.

AB The invention relates to oligoarylene derivs. represented by
 Ar1-Ch-Ar2, Ch1-L-Ch2, Ar3-(L1)a-Ch3-(L2)b-Ar4, and
 Ar5-Ch4-(Ar7)n-L3-(Ar8)m-Ch5-Ar6(1) [Ch, Ch1 and Ch2 = C14-20
 condensed aromatic ring; Ch3, Ch4 and Ch5 = C14-20 arylene group;
 Ar1-6 = aryl group containing 5-30 atoms; Ar7 and Ar8 = arylene group
 containing 5-30 atoms; L1-3 = connecting group; and a, b, n and m = 0
 or 1]. The oligoarylene derivs. are suited for use as a host
 material of a blue electroluminescent material in an organic
 electroluminescent device.

IT **663954-33-4P**
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (oligoarylene derivs. for organic electroluminescent devices)
 RN 663954-33-4 HCAPLUS
 CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA
 INDEX NAME)



IC ICM C07C015-62
 ICS C09K011-06; H05B033-14; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 25
 IT 154853-83-5P 663954-28-7P 663954-29-8P 663954-30-1P
 663954-32-3P **663954-33-4P**
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (oligoarylene derivs. for organic electroluminescent devices)

L134 ANSWER 8 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

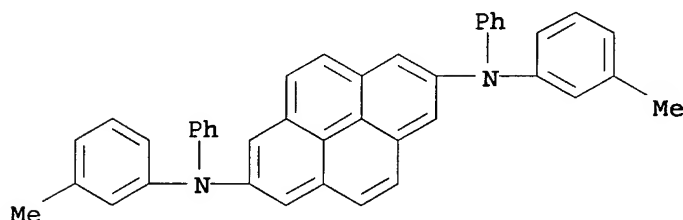
2003:887644 Document No. 139:388417 Electrophotographic imaging members. Fu, Min-Hong; Helbig, Colleen A.; Evans, Kent J.; Carmichael, Kathleen M.; Schneider, June E.; Skinner, David M.; Willnow, Alfred H. (Xerox Corporation, USA). U.S. US 6645686 B1 20031111, 9 pp. (English). CODEN: USXXAM. APPLICATION: US 2002-205127 20020723.

AB An electrophotog. imaging member comprises a substrate, a charge generating layer, and a charge transport layer. The charge transport layer comprises a binder and charge transport mols., wherein the binder eliminates or minimizes crystallization of the charge transport mols. Optionally, an electrophotog. imaging member comprises a substrate and a single charge generating and charge transport layer. The single charge generating and charge transport layer comprises a binder, charge generating mols. and charge transport mols., wherein the binder eliminates or minimizes crystallization of the charge transport mols. Specific binders are PCZ 800, a PCZ 500, or a PCZ 400 polycarbonate resin.

IT 143141-30-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (charge transport agent; electrophotog. imaging members containing)

RN 143141-30-4 HCAPLUS

CN 2,7-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



IC ICM G03G005-047

INCL 430058400; 430058600; 430058650

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38

IT 288-32-4, Imidazole, uses 288-88-0, 1H-1,2,4-Triazole:
 1679-98-7, 2,5-Bis(4-diethylaminophenyl)-1,3,4-oxadiazole
 2871-86-5 2871-87-6 4364-27-6 4364-28-7 15008-36-3
 24090-99-1 24105-92-8 36118-45-3, Pyrazoline 65181-79-5
 68189-23-1, p-Diethylaminobenzaldehyde-(diphenylhydrazone)
 71135-00-7 71135-01-8 71135-02-9 71135-03-0 71135-04-1
 71281-06-6 73276-70-7 73276-71-8 75179-93-0 75232-44-9
 75238-79-8 79183-77-0 79183-78-1 80730-93-4 80730-94-5
 80731-00-6 84678-52-4 95905-90-1 102159-98-8 105465-24-5
 143141-30-4 623142-18-7 623142-19-8,
 {1-[Lepidyl-(2)]-3-(p-diethylaminophenyl)-5-(p-diethylaminophenyl)pyrazoline} 623142-20-1, {1-[Quinoly-(2)]-3-(p-diethylaminophenyl)-5-(p-diethylaminophenyl)pyrazoline}
 623142-21-2, {1-[Pyridyl-(2)]-3-(p-diethylaminostyryl)-5-(p-diethylaminophenyl)pyrazoline} 623142-22-3, 1-[6-Methoxypyridyl-(2)]-3-(p-diethylaminostyryl)-5-(p-diethylaminophenyl) pyrazoline

623142-23-4, 1-Phenyl-3-[p-dimethylaminostyryl]-5-(p-dimethylaminostyryl) pyrazoline 623142-24-5,
 {1-Phenyl-3-[p-diethylaminostyryl]-5-(p-diethylaminostyryl)pyrazoline}

RL: TEM (Technical or engineered material use); USES (Uses)
 (charge transport agent; electrophotog. imaging members containing)

L134 ANSWER 9 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:964695 Document No. 138:47036 Organic electroluminescence device with gallium quinolinato complex and styryl arylene host. Hosokawa, Chishio; Funahashi, Masakazu; Sakai, Toshio; Arakane, Takashi; Yamamoto, Hiroshi (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2002102118 A1 20021219, 73 pp. DESIGNATED STATES: W: CN, IN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP4427 20020507. PRIORITY: JP 2001-170960 20010606.

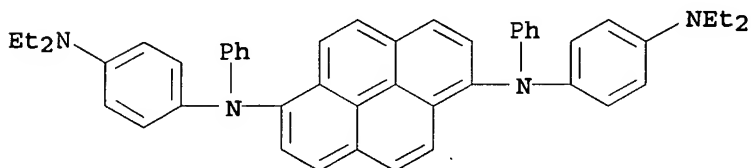
AB The invention refers to an organic electroluminescence device comprising at least one organic thin-film layer with a laminate containing a metal complex with energy gap > 2.8 eV, and a host material layer. The electroluminescence device exhibits a high luminance and has high emission efficiency and a long life.

IT 478702-59-9

RL: DEV (Device component use); USES (Uses)
 (organic electroluminescence device with gallium quinolinato complex and styryl arylene host)

RN 478702-59-9 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis[4-(diethylamino)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-22

ICS H05B033-14; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 23102-67-2 186412-15-7 221453-38-9 279672-58-1 403671-71-6
 403671-73-8 478702-59-9 478702-60-2

RL: DEV (Device component use); USES (Uses)
 (organic electroluminescence device with gallium quinolinato complex and styryl arylene host)

L134 ANSWER 10 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:313483 Document No. 136:332524 Organic electroluminescent devices. Hosokawa, Chishio; Funahashi, Masakazu (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002124385 A2 20020426, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-319265 20001019.

AB The devices comprise a pair of electrodes interposing an organic

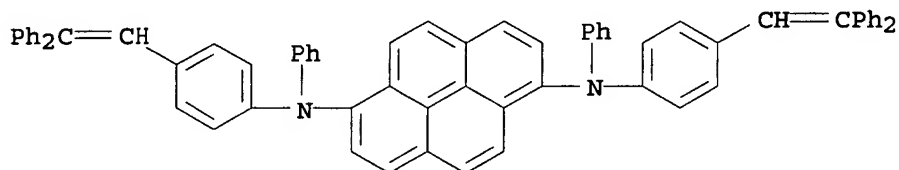
electroluminescent laminate containing a phosphor layer comprising a polyarom. hydrocarbon ring.

IT 415683-11-3

RL: DEV (Device component use); USES (Uses)
(organic electroluminescent devices)

RN 415683-11-3 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis[4-(2,2-diphenylethenyl)phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C07C013-40; C07C013-615; C09B048-00; C09K011-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 7439-93-2, Lithium, uses 50926-11-9, ITO 65181-78-4, TPD 123847-85-8,

α -NPD 274256-88-1 415683-03-3 415683-04-4

415683-05-5 415683-06-6 415683-07-7 415683-08-8

415683-09-9 415683-10-2 415683-11-3 415683-13-5

RL: DEV (Device component use); USES (Uses)
(organic electroluminescent devices)

L134 ANSWER 11 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:273085 Document No. 136:316695 Organic electroluminescent device. Agata, Takashi; Okuda, Daisuke; Yoneyama, Hiroto; Seki, Mieko; Mashimo, Kiyokazu; Hirose, Eiichi; Sato, Katsuhiro; Nukada, Katsuki (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002110360 A2 20020412, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-303696 20001003.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

*

AB The invention relates to an organic electroluminescent device comprising the hole transporting material represented by I and II [R1-3 = H, alkyl, alkoxy, etc.; R4 = H, alkyl, aryl, etc.; X = divalent aromatic group; T = C1-10 divalent normal or branched hydrocarbon group; k = 0 or 1].

IT 409115-13-5

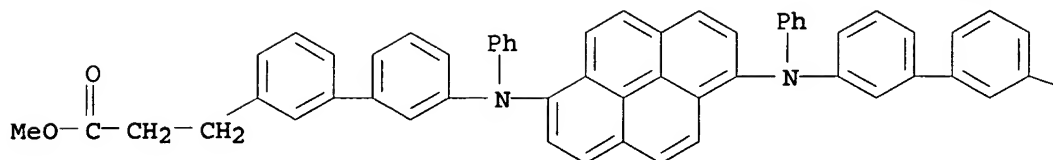
RL: DEV (Device component use); USES (Uses)
(hole transporting material; organic electroluminescent device)

RN 409115-13-5 HCAPLUS

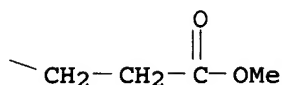
CN [1,1'-Biphenyl]-3-propanoic acid, 3',3'''-[1,6-pyrenediylbis(phenylimino)]bis-, dimethyl ester (9CI) (CA INDEX

NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-22
ICS C09K011-06; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25
IT 409115-12-4 409115-13-5 409115-14-6 409115-15-7
RL: DEV (Device component use); USES (Uses)
(hole transporting material; organic electroluminescent device)

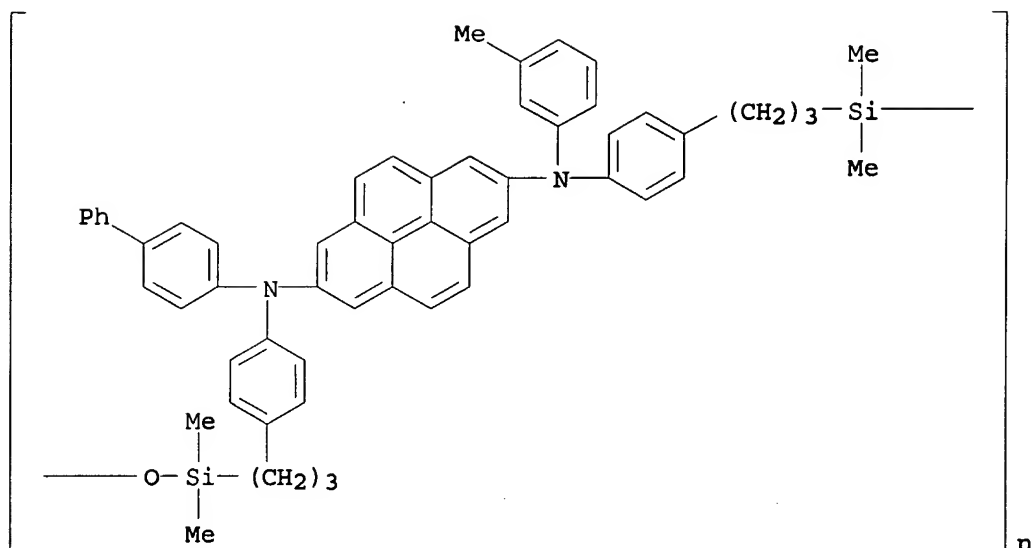
L134 ANSWER 12 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1999:490262 Document No. 131:163351 Electrophotographic photoreceptor with surface layer containing polymer having arylamine and siloxane structures. Tanaka, Takakazu; Hirano, Hidetoshi (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP 11212290 A2 19990806 Heisei, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-16777 19980129.

AB The title photoreceptor comprises a conductive support coated with a photosensitive layer of which the surface layer containing a straight-chain resin which has charge-transporting ability and contains a repeating unit having arylamine and siloxane structures. The photoreceptor shows high mech. strength, photosensitivity, and durability in repeated use.

IT 237426-13-0
RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor with surface layer containing polymer having arylamine and siloxane structures)

RN 237426-13-0 HCAPLUS

CN Poly[oxy(dimethylsilylene)-1,3-propanediyl-1,4-phenylene([1,1'-biphenyl]-4-ylimino)-2,7-pyrenediyl[(3-methylphenyl)imino]-1,4-phenylene-1,3-propanediyl(dimethylsilylene)] (9CI) (CA INDEX NAME)



IC ICM G03G005-147

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

IT 237426-07-2 237426-08-3 237426-09-4 237426-10-7
237426-11-8 237426-12-9 **237426-13-0** 237426-14-1
237426-15-2 237426-16-3 237426-18-5

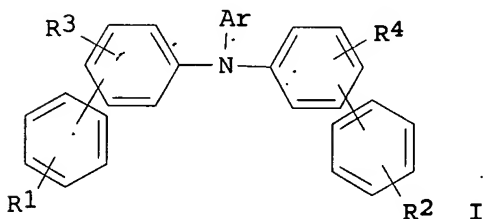
RL: DEV (Device component use); USES (Uses)

(electrophotog. photoreceptor with surface layer containing polymer having arylamine and siloxane structures)

L134 ANSWER 13 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1999:157136 Document No. 130:244425 Electrophotographic photoreceptor using specific two types of charge-transporting materials. Kurimoto, Eiji; Umeda, Minoru; Ikegami, Takaaki; Sakon, Yota (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11065140 A2 19990305 Heisei, 384 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-239555 19970815.

GI



AB The title photoreceptor comprises a conductive support coated with

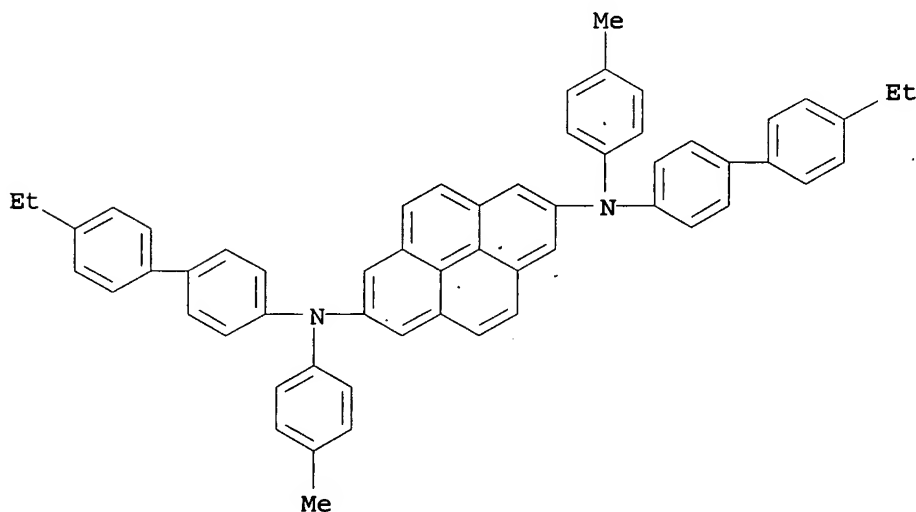
a photosensitive layer containing a compound I [R1, R2 = H, amino, (substituted) dialkylamino, alkoxy, thioalkoxy, aryloxy, (substituted) alkyl, halo, (substituted) aryl; R3, R4 = H, alkoxy, (substituted) alkyl, halo; Ar = (substituted) monocyclic aromatic hydrocarbon, (substituted) non-condensed polycyclic aromatic hydrocarbon, (substituted) heterocycle] and a compound [A(CH:CH)_nCR:CH]2(CH2)_m [II; A = 9-anthryl, (substituted) N-substituted carbazolyl, N-substituted phenothiazinyl, ArNR1R2 {Ar = (substituted) arylene; R1, R2 = (substituted) alkyl, (substituted) aralkyl, (substituted) aryl}; R = H, (substituted) alkyl, (substituted) aralkyl, (substituted) aryl; m = 2-8; n = 0 or 1]. 22 Types of compds. may be used instead of I and II. The photoreceptor shows high photosensitivity, stable charging properties, and improved durability in repeated use.

IT 213967-16-9 219622-30-7 221308-42-5
221308-43-6 221308-44-7 221308-45-8
221308-46-9

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor containing two-types of charge-transporting agents)

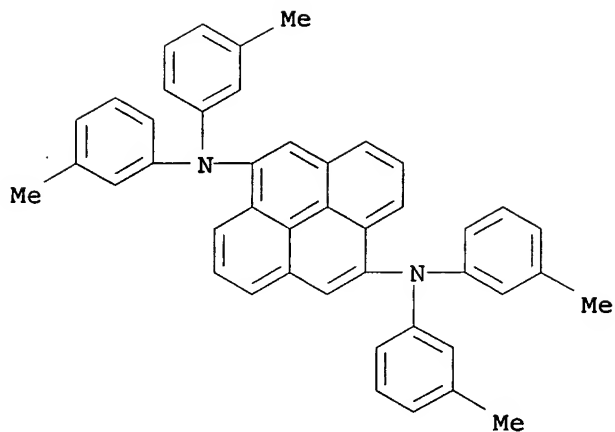
RN 213967-16-9 HCAPLUS

CN 2,7-Pyrenediamine, N,N'-bis(4'-ethyl[1,1'-biphenyl]-4-yl)-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

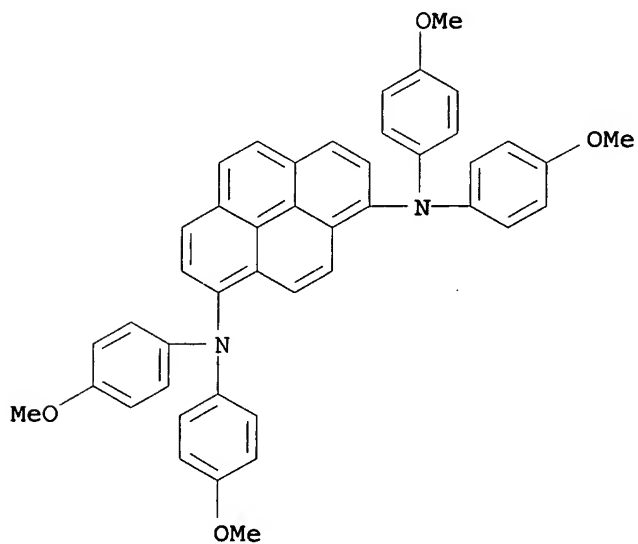


RN 219622-30-7 HCAPLUS

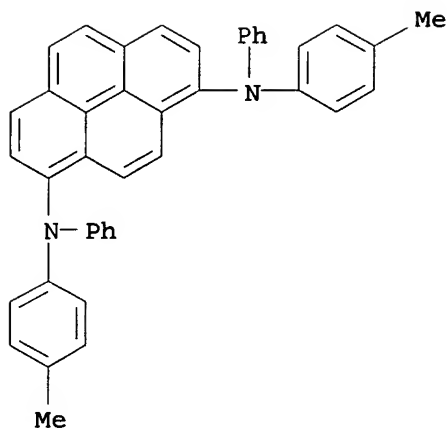
CN 4,9-Pyrenediamine, N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



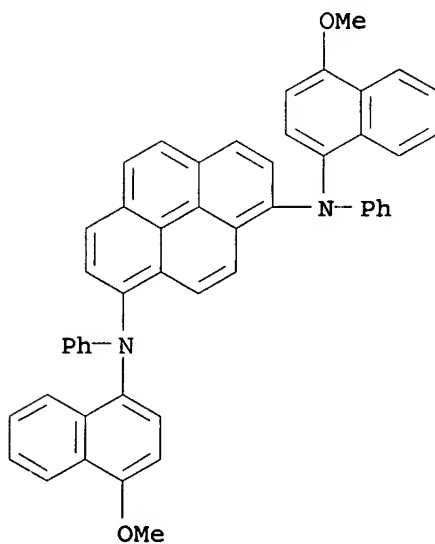
RN 221308-42-5 HCAPLUS
CN 1,8-Pyrenediimine, N,N,N',N'-tetrakis(4-methoxyphenyl)- (9CI) (CA
INDEX NAME)



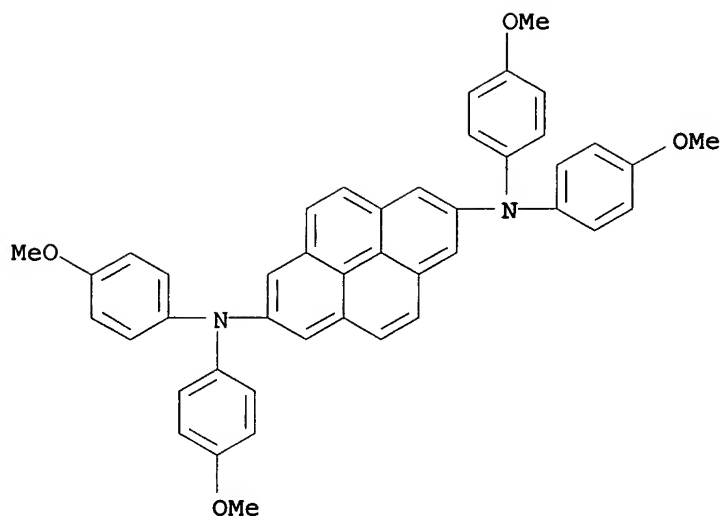
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CN 1,8-Pyrenediimine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



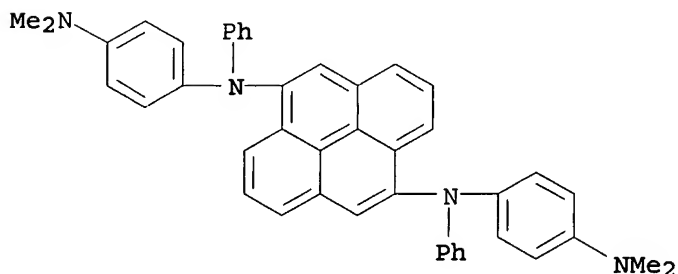
RN 221308-44-7 HCAPLUS
CN 1,8-Pyrenediimine, N,N'-bis(4-methoxy-1-naphthalenyl)-N,N'-
diphenyl- (9CI) (CA INDEX NAME)



RN 221308-45-8 HCAPLUS
CN 2,7-Pyrenediimine, N,N,N',N'-tetrakis(4-methoxyphenyl)- (9CI) (CA
INDEX NAME)



RN 221308-46-9 HCAPLUS
 CN 4,9-Pyrenediimine, N,N'-bis[4-(dimethoxyamino)phenyl]-N,N'-diphenyl-
 (9CI) (CA INDEX NAME)



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 ICS G03G005-06
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 Other Reprographic Processes)
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213967-21-6	213967-22-7	213967-23-8	214002-57-0

RL: DEV (Device component use); USES (Uses)

(electrophotog. photoreceptor containing two-types of
charge-transporting agents)

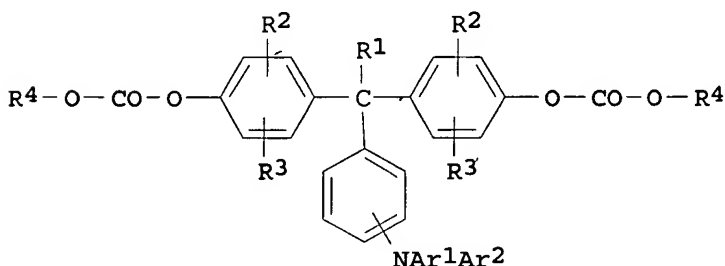
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RL: DEV (Device component use); USES (Uses)
 (electrophotog. photoreceptor containing two-types of
 charge-transporting agents)

L134 ANSWER 14 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1998:811797 Document No. 130:117304 Charge-transporting material and
 electrophotographic photoreceptor using same. Kurimoto, Eiji;
 Umeda, Minoru; Sakon, Yota; Ikegami, Takaaki (Ricoh Co., Ltd.,
 Japan). Jpn. Kokai Tokkyo Koho JP 10333347 A2 19981218 Heisei,
 408 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-160127
 19970530.

GI



AB The charge-transporting material contains a compound
 [R1NR2YOm(CH2)nOCO2]pX [R1, R2 = H, (substituted) alkyl,
 (substituted) aryl; Y = (substituted) arylene; m = 0, 1; n = 0-6;
 p = 1, 2; when p = 1, X = (substituted) alkyl or (substituted)
 aryl and when p = 2, X = alkylene or dialkylene ether] and
 ≥1 selected from an amino- and oxycarboxyloxy-containing
 triphenylmethyl compound of I (R1, R4 = H, alkyl, aryl; R2, R3 = H,

alkyl, aryl, halo; Ar1, Ar2 = aryl) and other 35 types of compds. such as a compound Ar1CR1:CR2(CH:CH)_nAr2NR3R4 [R1 = (substituted) lower alkyl or (substituted) aryl; R2-4 = H, (substituted) lower alkyl, (substituted) aryl; Ar1 = (substituted) aryl, Ar1 and R1 may form a ring; Ar2 = (substituted) arylene; n = 0, 1]. The photoreceptor comprises a conductive support laminated with either (a) a monolayer photosensitive layer containing the material or (b) a charge-transporting layer containing the material and a charge-generating layer. The photoreceptor shows high photosensitivity and durability in repeated use.

IT 219622-29-4 219622-30-7 219622-31-8

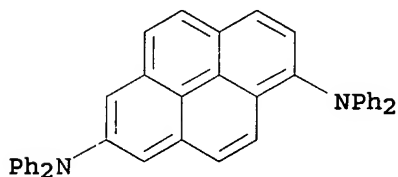
RL: DEV (Device component use); MOA (Modifier or additive use);

USES (Uses)

(electrophotog. photoreceptor using charge-transporting material of)

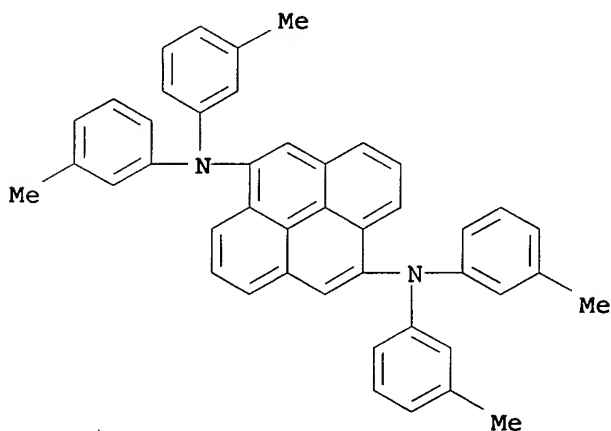
RN 219622-29-4 HCAPLUS

CN 1,7-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



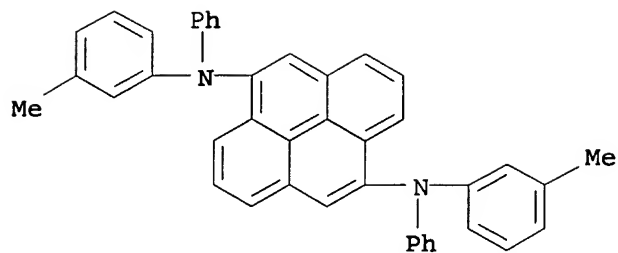
RN 219622-30-7 HCAPLUS

CN 4,9-Pyrenediamine, N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 219622-31-8 HCAPLUS

CN 4,9-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)



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	ICS	G03G005-06			
CC	74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)				
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	60949-19-1	61124-42-3	65698-85-3	70366-83-5	70366-88-0
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	79183-78-1	79739-92-7	80073-37-6	83994-84-7	84271-48-7
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 219622-36-3 219622-37-4

RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)

(electrophotog. photoreceptor using charge-transporting
 material of)

L134 ANSWER 15 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1998:764221 Document No. 130:30988 Organic compound and
 electroluminescent device using the same. Senoo, Akihiko;
 Toshida, Yomishi; Hashimoto, Yuichi; Ueno, Kazunori; Mashimo,
 Seiji; Urakawa, Shinichi (Canon Kabushiki Kaisha, Japan). Eur.
 Pat. Appl. EP 879868 A2 19981125, 57 pp. DESIGNATED STATES: R:
 AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION:
 EP 1998-303790 19980514. PRIORITY: JP 1997-142958 19970519.

AB Organic compds. are described which are represented by the general
 formula Ar1(Ar3)N-X-NAr2(Ar4) (X = (un)substituted arylene group
 or (un)substituted heterocyclic group; and each of at least 2
 groups among Ar1, Ar2, Ar3, and Ar4 = (un)substituted fluorenyl,
 and the remainder = (un)substituted aryl). Electroluminescent
 devices formed of a pair of electrodes and an organic layer including
 ≥ 1 of the compds described above interposed between the
 electrodes are also described. Preparation of the compds entails
 reacting I-X-I with compds. described by the general formula
 HNArAr' (Ar, Ar' = desired (un)substituted fluorenyl and
 (un)substituted aryl groups).

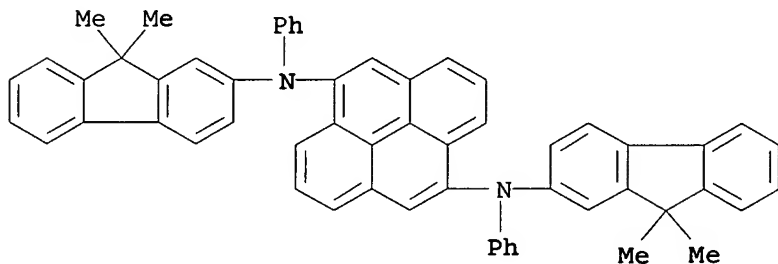
IT 216454-21-6P 216454-57-8P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP
 (Preparation); USES (Uses)

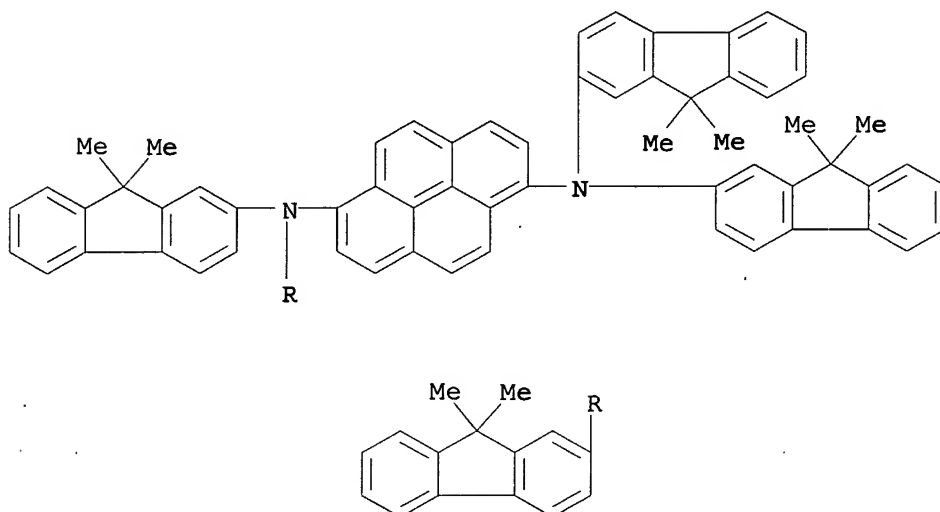
(organic diamino compds. and their preparation and electroluminescent
 devices using them)

RN 216454-21-6 HCAPLUS

CN 4,9-Pyrenediamine, N,N'-bis(9,9-dimethyl-9H-fluoren-2-yl)-N,N'-
 diphenyl- (9CI) (CA INDEX NAME)



RN 216454-57-8 HCAPLUS
 CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
 ICS H05B033-14
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

IT	216453-88-2P	216453-89-3P	216453-90-6P	216453-91-7P
	216453-92-8P	216453-93-9P	216453-96-2P	216453-97-3P
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	216454-16-9P	216454-17-0P	216454-18-1P	216454-19-2P
	216454-20-5P	216454-21-6P	216454-22-7P	216454-23-8P
	216454-24-9P	216454-26-1P	216454-27-2P	216454-28-3P
	216454-29-4P	216454-30-7P	216454-31-8P	216454-32-9P
	216454-34-1P	216454-36-3P	216454-37-4P	216454-41-0P
	216454-42-1P	216454-43-2P	216454-44-3P	216454-45-4P
	216454-46-5P	216454-47-6P	216454-48-7P	216454-49-8P
	216454-50-1P	216454-51-2P	216454-52-3P	216454-53-4P
	216454-54-5P	216454-55-6P	216454-56-7P	216454-57-8P
	216454-58-9P	216454-59-0P	216454-60-3P	216454-61-4P
	216454-62-5P	216454-63-6P	216454-64-7P	216454-65-8P
	216454-66-9P	216454-67-0P	216454-68-1P	216454-69-2P
	216454-70-5P	216454-71-6P	216454-72-7P	216454-73-8P
	216454-74-9P	216454-75-0P	216454-76-1P	216454-77-2P
	216454-78-3P	216454-79-4P	216454-80-7P	216454-81-8P
	216454-82-9P	216454-83-0P	216454-84-1P	216454-85-2P
	216454-86-3P	216454-87-4P	216454-88-5P	216454-89-6P

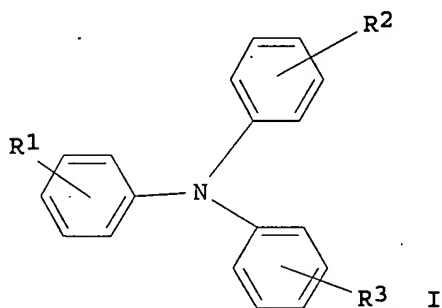
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(organic diamino compds. and their preparation and electroluminescent

devices using them)

L134 ANSWER 16 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1998:627446 Document No. 129:296148 Electrophotographic
 photoreceptor. Sakon, Yota; Umeda, Minoru; Ikegami, Takaaki;
 Kurimoto, Eiji (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho
 JP 10254154 A2 19980925 Heisei, 274 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 1997-76650 19970312.

GI



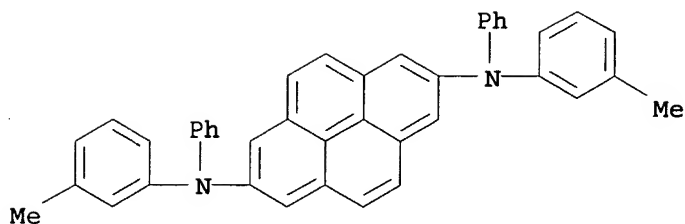
AB The title photoreceptor comprises a conductive support coated with a photosensitive layer containing a divinylbenzene derivative $o\text{-RCH:CHC}_6\text{H}_4\text{CH:CHR}$ [I; R = carbazolyl, pyridyl, thienyl, indolyl, furyl, (un)substituted Ph, (un)substituted styryl, (un)substituted naphthyl, (un)substituted anthryl (the substituent is selected from di-lower-alkylamino, lower alkyl, lower alkoxy, halo, aralkylamino, and amino)] and a triphenylamine derivative II (R1-R3 = H, lower alkyl, lower alkoxy, Ph, PhO, halo). Alternatively, 28 types of aromatic amines may be used in place of II. The photoreceptor may comprise a conductive support laminated with a charge-generating layer containing a charge-generating agent and a charge-transporting layer containing I and 1 compound selected from II and the 28 types of compds. The photoreceptor shows high photosensitivity and durability in repeated use.

IT 143141-30-4

RL: DEV (Device component use); USES (Uses)
 (electrophotog. photoreceptor containing divinylbenzene derivative combined with aromatic amine)

RN 143141-30-4 HCAPLUS

CN 2,7-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



IC ICM G03G005-06
ICS G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 1159-53-1 1874-45-9 13050-56-1 20297-28-3 37619-77-5
59670-37-0 65698-77-3 70367-03-2 70419-65-7 75293-68-4
77702-69-3 77702-81-9 77757-88-1 84678-51-3 84678-58-0
84687-99-0 118076-68-9 124537-78-6 124537-97-9 126714-03-2
128965-04-8 129970-69-0 129988-45-0 131059-49-9
132679-46-0 134305-87-6 135071-73-7 135071-76-0
135199-04-1 135722-62-2 136578-72-8 138510-79-9
138510-81-3 139905-66-1 139905-77-4 141388-61-6
143141-30-4 143764-46-9 143764-56-1 143877-77-4
146966-85-0 146967-41-1 159390-50-8 159390-60-0
163969-34-4 163969-49-1 201362-47-2 206661-60-1
206661-63-4 213898-15-8 213898-31-8 213966-41-7
214002-57-0 214135-42-9 214135-78-1 214272-44-3
214272-45-4 214272-46-5 214272-47-6 214272-48-7
214272-53-4 214272-54-5 214272-55-6 214272-56-7
214272-57-8 214272-58-9 214272-59-0 214272-60-3
214272-61-4 214272-62-5 214272-63-6 214272-64-7
214272-65-8 214272-66-9 214272-67-0 214272-68-1
214272-69-2 214272-70-5 214272-71-6 214272-72-7
214272-73-8 214272-74-9 214272-75-0 214272-76-1
214272-77-2 214272-78-3 214272-79-4 214272-80-7
214272-81-8

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor containing divinylbenzene derivative combined with aromatic amine)

L134 ANSWER 17 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1998:614437 Document No. 129:295965 Organic electroluminescent device with high luminance and polycyclic phosphorescent compound therefor. Onikubo, Shunichi; Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10251633 A2 19980922 Heisei, 59 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-62568 19970317.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB The claimed compound is I [A = aromatic (condensed) ring, (condensed) heterocycle excluding Q1 (E = H or linkage), bivalent group comprising ≥ 2 kinds of 2-10 above ring systems which are connected directly or via O, N, S, C1-20 chain, nonarom. cycle, where the case of A = Q3 is excluded; Ar1-4 = (condensed) aromatic group; X1-4 = O, S, CO, SO₂, C_xH₂xOCyH₂y (x, y = 0-20; x + y \neq 0), C2-20 alkyl(id)ene, bivalent alicyclic group; R1-20 = H, halo, alkyl (oxy), aromatic ring, aromatic heterocycle, amino]. Also claimed is an organic electroluminescent device containing I with high luminance and good stability in repeated uses.

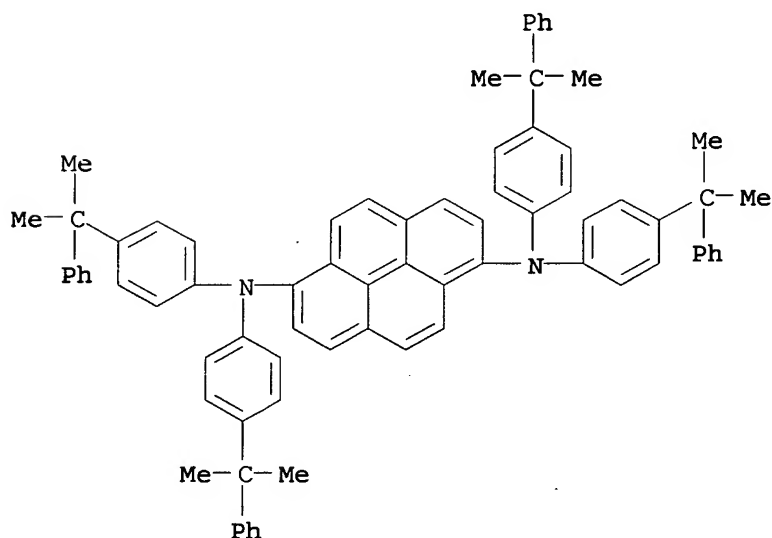
IT 213968-46-8

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(luminescent material; organic electroluminescent device containing polycyclic phosphorescent compound with high luminance)

RN 213968-46-8 HCAPLUS

CN 1,6-Pyrenediamine, N,N,N',N'-tetrakis[4-(1-methyl-1-phenylethyl)phenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

IT	205697-02-5	213968-34-4	213968-36-6	213968-38-8
	213968-40-2	213968-41-3	213968-42-4	213968-43-5
	213968-44-6	213968-45-7	213968-46-8	213968-47-9
	213968-48-0	213968-49-1	213968-50-4	213968-51-5
	213968-52-6	213968-53-7	213968-54-8	213968-55-9
	213968-56-0	213968-57-1	213968-58-2	213968-59-3
	213968-60-6	213968-61-7	213968-62-8	213968-63-9
	213968-64-0	213968-65-1	213968-66-2	213968-67-3
	213968-68-4	213968-69-5	213968-70-8	213968-71-9
	213968-73-1	213968-74-2	213968-75-3	213968-76-4
	213968-77-5	213968-79-7	213968-80-0	213968-81-1

213968-82-2	213968-83-3	213968-85-5	213968-86-6
213968-87-7	213968-88-8	213968-89-9	213968-91-3
213968-92-4	213968-93-5	213968-94-6	213968-95-7
213968-96-8	213968-97-9	213968-98-0	213968-99-1
213969-00-7	213969-01-8	213969-02-9	213969-03-0
213969-04-1	213969-05-2	213969-06-3	213969-07-4
213969-08-5	213969-09-6	213969-10-9	213969-11-0
213969-12-1	213969-13-2	213969-14-3	213969-15-4
213969-16-5	213969-17-6	213969-18-7	213969-19-8
213969-20-1	213969-21-2	213969-22-3	213969-23-4

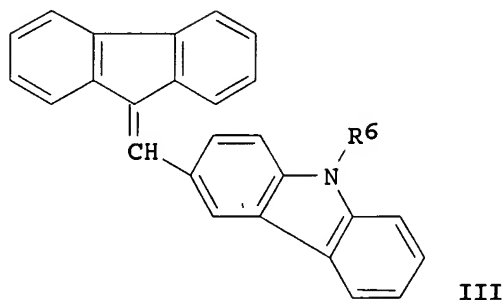
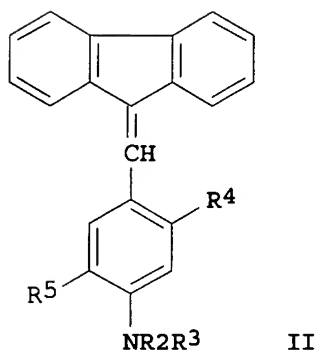
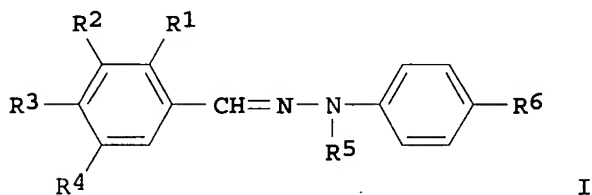
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(luminescent material; organic electroluminescent device containing polycyclic phosphorescent compound with high luminance)

L134 ANSWER 18 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1998:594740 Document No. 129:283407 Electrophotographic photoreceptor with improved sensitivity and durability. Umeda, Minoru; Sakon, Yota; Ikegami, Takaaki; Kurimoto, Eiji (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10239879 A2 19980911 Heisei, 223 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-62270 19970228.

GI



AB The title photoreceptor contains I (R1-4, R6 = H, halo, lower alkyl, lower alkoxy, di-lower alkylamino, dibenzylamino; R5 = lower alkyl, benzyl) and II (R1 = H, halo, CN, lower alkyl; R2, R3 = H, lower alkyl, benzyl; R4, R5 = H, halo, lower alkyl, lower alkoxy, di-lower alkylamino) or III (R1 = H, halo, CN, lower alkyl; R6 = H, lower alkyl, benzyl) in a photosensitive layer. Other charge transport materials are also claimed with Markush

structures.

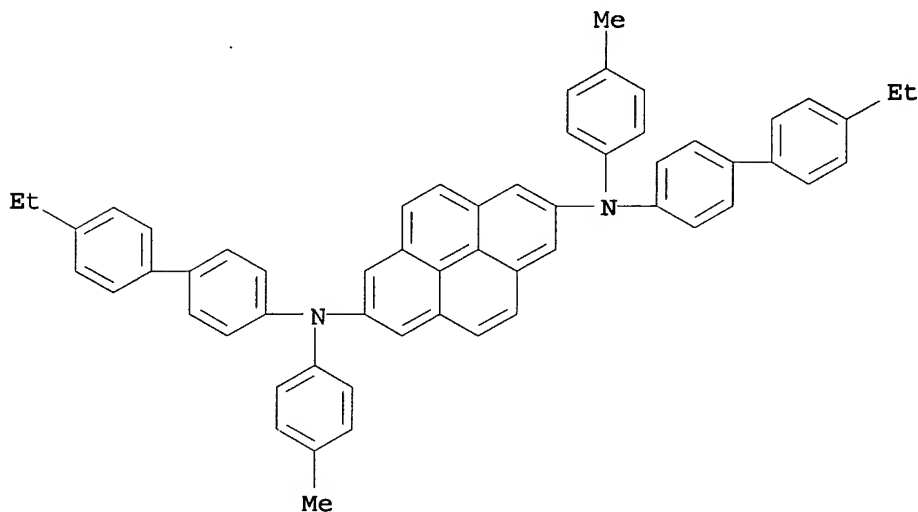
IT 213967-16-9

RL: DEV (Device component use); USES (Uses)

(charge transport material in electrophotog. photoreceptor with improved sensitivity and durability)

RN 213967-16-9 HCAPLUS

CN 2,7-Pyrenediamine, N,N'-bis(4'-ethyl[1,1'-biphenyl]-4-yl)-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-06

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT	2725-46-4	23718-92-5	24090-99-1	28772-59-0	37619-80-0
	50670-19-4	59670-26-7	59670-37-0	65419-21-8	65419-26-3
	70366-85-7	70366-94-8	70419-51-1	73276-71-8	75232-44-9
	75489-06-4	77702-64-8	77702-67-1	77702-81-9	78014-47-8
	79739-81-4	79739-85-8	79739-90-5	79739-92-7	79739-94-9
	80073-38-7	80165-58-8	80165-59-9	80165-60-2	80324-45-4
	84687-91-2	84687-92-3	85314-61-0	88530-89-6	88740-79-8
	95537-18-1	95697-50-0	98517-15-8	105351-26-6	106614-59-9
	109326-30-9	110086-80-1	118076-69-0	121671-02-1	
	123521-37-9	124373-59-7	124537-76-4	124537-81-1	
	124537-91-3	125323-58-2	127661-75-0	127845-57-2	
	127845-64-1	128965-02-6	129970-68-9	129970-69-0	
	129988-45-0	130746-03-1	130746-07-5	131059-49-9	
	131625-67-7	134305-58-1	134306-04-0	134744-23-3	
	134917-81-0	134917-82-1	135199-01-8	136051-98-4	
	136286-95-8	137716-82-6	137810-28-7	138510-79-9	
	138510-84-6	138796-65-3	139184-14-8	139262-04-7	
	139905-67-2	139905-76-3	142031-03-6	142773-15-7	
	142773-17-9	143764-40-3	143877-69-4	158687-30-0	
	159390-47-3	163969-31-1	163969-37-7	163969-39-9	
	163969-44-6	163969-49-1	163969-52-6	184104-78-7	
	201362-47-2	210180-55-5	211429-32-2	213898-63-6	

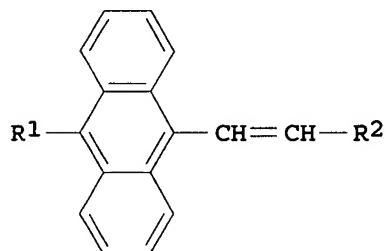
213898-85-2	213965-47-0	213965-60-7	213965-63-0
213965-67-4	213965-69-6	213965-71-0	213965-73-2
213965-86-7	213965-88-9	213965-91-4	213965-93-6
213965-95-8	213965-97-0	213965-99-2	213966-01-9
213966-03-1	213966-05-3	213966-07-5	213966-09-7
213966-13-3	213966-25-7	213966-27-9	213966-29-1
213966-39-3	213966-41-7	213966-43-9	213966-48-4
213966-52-0	213966-63-3	213966-67-7	213966-69-9
213966-73-5	213966-75-7	213966-87-1	213966-94-0
213967-01-2	213967-05-6	213967-07-8	213967-09-0
213967-10-3	213967-12-5	213967-13-6	213967-15-8
213967-16-9	213967-17-0	213967-18-1	213967-19-2
213967-20-5	213967-21-6	213967-22-7	213967-23-8

RL: DEV (Device component use); USES (Uses)

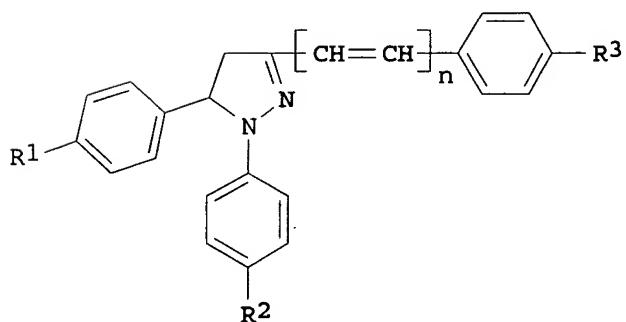
(charge transport material in electrophotog. photoreceptor with improved sensitivity and durability)

L134 ANSWER 19 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1998:594739 Document No. 129:283406 Electrophotographic
 photoreceptor with improved sensitivity and durability. Umeda,
 Minoru; Sakon, Yota; Ikegami, Takaaki; Kurimoto, Eiji (Ricoh Co.,
 Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10239877 A2 19980911
 Heisei, 227 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
 1997-54083 19970221.

GI



I



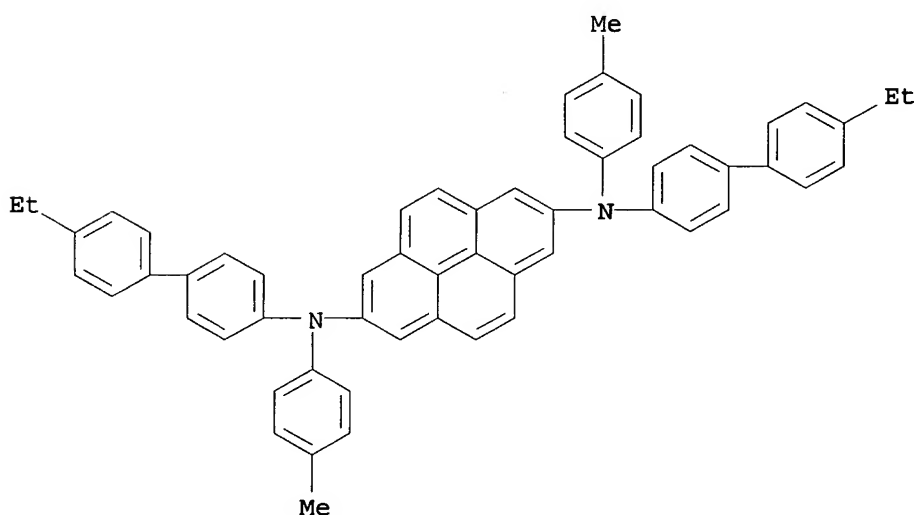
II

AB The title photoreceptor contains I (R1 = H, halo; R2 = aromatic, heterocyclyl) and II (R1, R3 = H, lower alkyl, lower alkoxy, di-lower alkylamino; R2 = H, lower alkyl, lower alkoxy, halo, NO2; n = 0, 1) in a photosensitive layer. Other charge transport materials are also claimed with Markush structures.

IT 213967-16-9
 RL: DEV (Device component use); USES (Uses)
 (charge transport material in electrophotog. photoreceptor with improved sensitivity and durability)

RN 213967-16-9 HCAPLUS

CN 2,7-Pyrenediamine, N,N'-bis(4'-ethyl[1,1'-biphenyl]-4-yl)-N,N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-06
 ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 1159-53-1 1654-48-4 1679-98-7 1895-98-3 5043-92-5

22271-30-3	24090-99-1	37619-80-0	50670-19-4	60949-16-8
60949-17-9	60949-19-1	60949-20-4	65362-78-9	65419-21-8
65419-26-3	65698-76-2	70366-85-7	70366-94-8	70419-51-1
71530-63-7	75232-44-9	75489-06-4	77619-46-6	77619-47-7
77619-49-9	77631-28-8	77702-64-8	77702-67-1	77702-81-9
78014-47-8	79096-22-3	79096-24-5	79096-27-8	80073-38-7
84271-48-7	88740-79-8	88740-82-3	95697-50-0	98517-15-8
106614-59-9	109326-30-9	117933-17-2	117933-19-4	
117933-20-7	118076-60-1	118076-69-0	121671-02-1	
123521-37-9	124373-59-7	124537-76-4	124537-81-1	
124537-91-3	125323-58-2	127845-57-2	127845-64-1	
128965-02-6	129970-68-9	129970-69-0	129988-45-0	
130746-03-1	131059-49-9	131625-67-7	134305-58-1	
134306-04-0	134917-81-0	134917-82-1	135071-67-9	
135071-75-9	135199-01-8	136052-08-9	136286-95-8	
137716-82-6	137810-28-7	138510-79-9	138510-84-6	

138796-66-4	139184-14-8	139184-33-1	139262-04-7
139905-65-0	139905-67-2	139905-76-3	142031-03-6
142773-15-7	142773-17-9	143764-40-3	143877-69-4
146967-13-7	154840-60-5	158687-30-0	159390-47-3
163969-31-1	163969-37-7	163969-39-9	163969-44-6
163969-49-1	163969-52-6	184104-78-7	201362-47-2
205326-97-2	205326-98-3	205327-15-7	206661-59-8
210180-55-5	211429-32-2	213531-15-8	213898-63-6
213898-85-2	213965-47-0	213966-13-3	213966-25-7
213966-27-9	213966-39-3	213966-41-7	213966-43-9
213966-52-0	213966-63-3	213966-73-5	213966-75-7
213966-87-1	213966-94-0	213967-05-6	213967-07-8
213967-09-0	213967-10-3	213967-15-8	213967-16-9
213967-17-0	213967-18-1	213967-19-2	213967-20-5
213967-21-6	213967-22-7	214002-52-5	214002-53-6
214002-54-7	214002-55-8	214002-56-9	214002-57-0
214002-58-1	214002-59-2	214002-60-5	

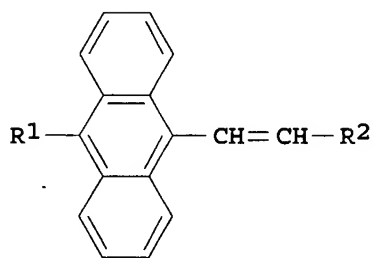
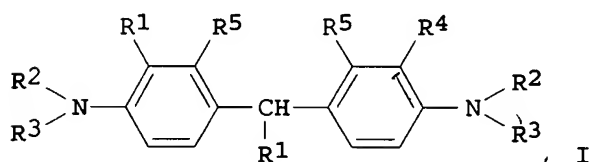
RL: DEV (Device component use); USES (Uses)

(charge transport material in electrophotog. photoreceptor with improved sensitivity and durability)

L134 ANSWER 20 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1998:590841 Document No. 129:296147 Electrophotographic photoreceptor with improved sensitivity and durability. Kurimoto, Eiji; Umeta, Minoru; Sakon, Yota; Ikeue, Takaaki (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10239878 A2 19980911 Heisei, 269 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-59960 19970227.

GI



AB The title photoreceptor contains I (R1 = C1-11-alkyl, Ph, heterocyclyl; R2, R3 = H, lower alkyl, C1-4-hydroxyalkyl, C1-4-chloroalkyl; R4, R5 = H, lower alkyl, lower alkoxy, halo; R2-R3 may form N-containing heterocycle) and II (R1 = H, halo; R2 = aromatic, heterocyclyl; R2 may include substituent selected from

halo, CN, di-lower alkylamino, diaralkylamino, lower alkyl, lower alkoxy, and NO₂) in a photosensitive layer. 29 Other charge transport materials are also claimed with Markush structures.

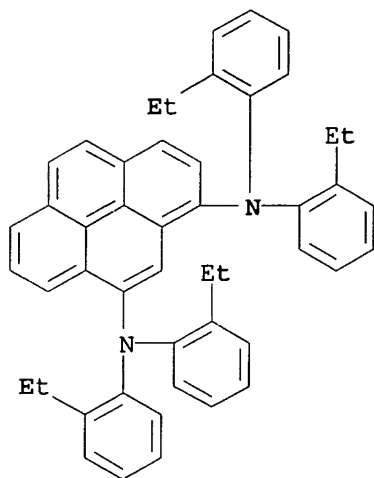
IT 214135-82-7

RL: DEV (Device component use); USES (Uses)

(charge transport material in electrophotog. photoreceptor with improved sensitivity and durability)

RN 214135-82-7 HCAPLUS

CN 1,9-Pyrenediamine, N,N,N',N'-tetrakis(2-ethylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-06

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

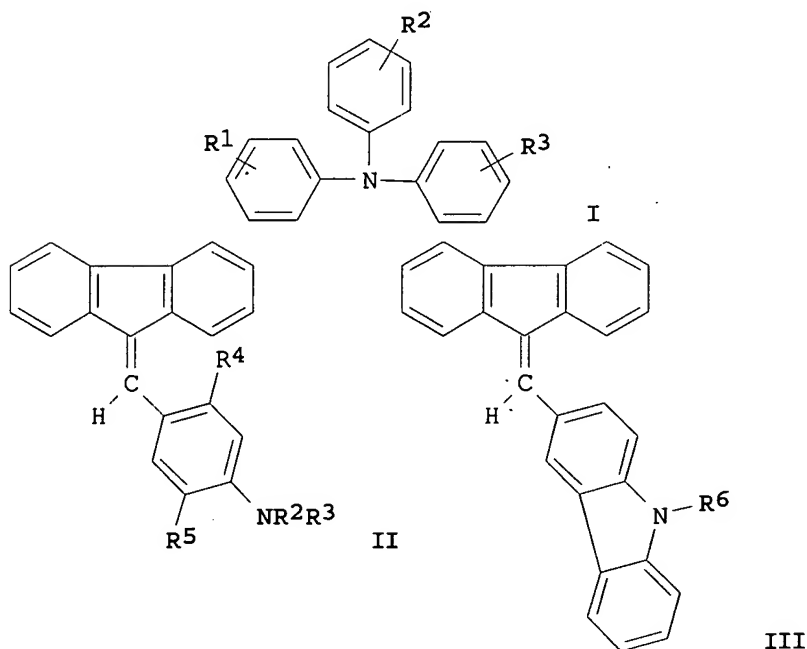
IT	28711-00-4	36217-56-8	38764-40-8	59670-90-5	60949-16-8
	65698-67-1	65698-85-3	70366-85-7	70419-75-9	75179-94-1
	75179-95-2	75238-79-8	77619-49-9	77702-67-1	77702-80-8
	79096-22-3	79096-26-7	79739-81-4	84678-60-4	98517-10-3
	124537-77-5	125681-60-9	129970-69-0	130746-04-2	
	130754-79-9	134305-70-7	134305-87-6	135071-76-0	
	135776-72-6	136051-98-4	138510-84-6	138796-30-2	
	138796-41-5	138796-80-2	139905-64-9	139905-73-0	
	139905-75-2	141919-24-6	143764-45-8	143764-65-2	
	143764-84-5	143877-75-2	158687-31-1	163969-27-5	
	163969-30-0	163969-36-6	163969-41-3	184104-78-7	
	205327-04-4	205327-12-4	210180-44-2	210180-60-2	
	213965-60-7	214002-52-5	214135-00-9	214135-03-2	
	214135-04-3	214135-05-4	214135-06-5	214135-07-6	
	214135-08-7	214135-09-8	214135-13-4	214135-16-7	
	214135-19-0	214135-20-3	214135-21-4	214135-32-7	
	214135-34-9	214135-37-2	214135-39-4	214135-42-9	
	214135-48-5	214135-55-4	214135-57-6	214135-58-7	
	214135-61-2	214135-68-9	214135-71-4	214135-72-5	
	214135-74-7	214135-77-0	214135-78-1	214135-80-5	
	214135-81-6	214135-82-7	214135-84-9	214135-86-1	

214135-87-2 214135-88-3 214135-90-7 214135-91-8
214194-96-4

RL: DEV (Device component use); USES (Uses)
(charge transport material in electrophotog. photoreceptor with improved sensitivity and durability)

L134 ANSWER 21 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1998:590839 Document No. 129:283403 Electrophotographic
photoreceptor with improve sensitivity and durability. Kurimoto,
Eiji; Umeta, Minoru; Sakon, Yota; Ikeue, Takaaki (Ricoh Co., Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 10239872 A2 19980911 Heisei,
240 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-55642
19970224.

GI



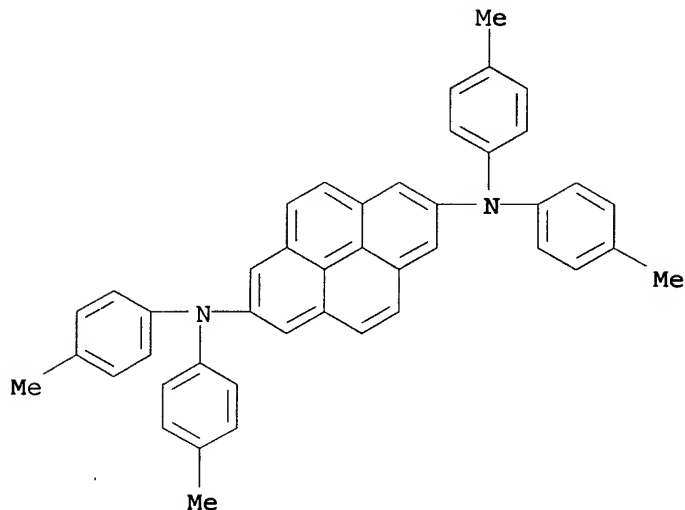
AB The title photoreceptor contains I (R1, R2, R3 = H, lower alkyl, lower alkoxy, Ph, phenoxy, halo), II (R1 = H, halo, CN, lower alkyl; R2, R3 = H, lower alkyl, benzyl; R4, R5 = H, halo, lower alkyl, lower alkoxy, di-lower alkylamino) and III (R1 = H, halo, CN, lower alkyl; R6 = H, lower alkyl, benzyl) in a photosensitive layer. 26 More charge transport materials with Markush structures are also claimed.

IT 163969-53-7

RL: DEV (Device component use); USES (Uses)
(charge transport material in electrophotog. photoreceptor with improve sensitivity and durability)

RN 163969-53-7 HCAPLUS

CN 2,7-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 1874-35-7 2989-45-9 20440-95-3 36809-22-0 65698-64-8
70367-03-2 70420-02-9 75179-95-2 75238-79-8 77249-38-8
77702-69-3 77702-74-0 84678-56-8 84687-90-1 109326-23-0
118076-60-1 121671-05-4 127661-77-2 129970-68-9
130835-68-6 134305-58-1 134306-02-8 135071-76-0
135071-77-1 135776-72-6 137716-82-6 138510-83-5
138796-59-5 139153-94-9 139154-12-4 139184-34-2
139905-64-9 139905-65-0 139905-78-5 143141-27-9
143764-60-7 143764-77-6 143877-71-8 143877-77-4
146966-91-8 146967-01-3 154840-52-5 154840-60-5
159390-54-2 163969-31-1 163969-44-6 163969-53-7
167308-80-7 205262-47-1 205327-11-3 210180-29-3
210180-57-7 211429-30-0 213531-05-6 213531-09-0
213897-96-2 213898-11-4 213898-15-8 213898-24-9
213898-29-4 213898-31-8 213898-33-0 213898-36-3
213898-42-1 213898-44-3 213898-46-5 213898-50-1
213898-52-3 213898-54-5 213898-56-7 213898-61-4
213898-63-6 213898-66-9 213898-68-1 213898-78-3
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213899-02-6 213899-04-8 213899-08-2 213899-11-7

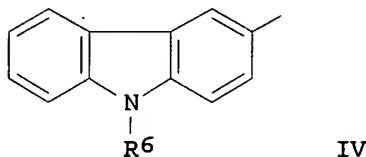
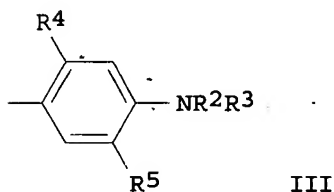
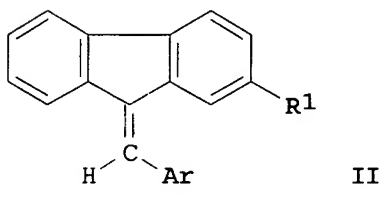
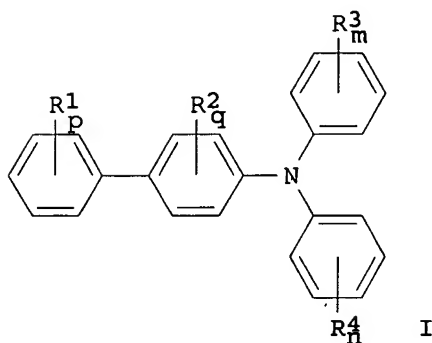
RL: DEV (Device component use); USES (Uses)

(charge transport material in electrophotog. photoreceptor with improve sensitivity and durability)

L134 ANSWER 22 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1998:576666 Document No. 129:267867 Electrophotographic
photoreceptor containing two charge-transporting compounds.
Kurimoto, Eiji; Umeda, Minoru; Sakon, Yota; Ikegami, Takaaki

(Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10232501 A2
 19980902 Heisei, 243 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1997-49914 19970218.

GI



AB The electrophotog. photoreceptor comprises a photosensitive layer on an elec. conductive support, wherein the photosensitive layer contains I and II (R1,3,4 = H, amino, etc.; R2 = H, alkoxy, etc.; m,n,p,q = 1-4; Ar = III, IV; R5,6 = substituent). The electrophotog. photoreceptor provided high sensitivity by combining 2 types of sp. charge-transporting compds.

IT 213531-10-3

RL: DEV (Device component use); MOA (Modifier or additive use);

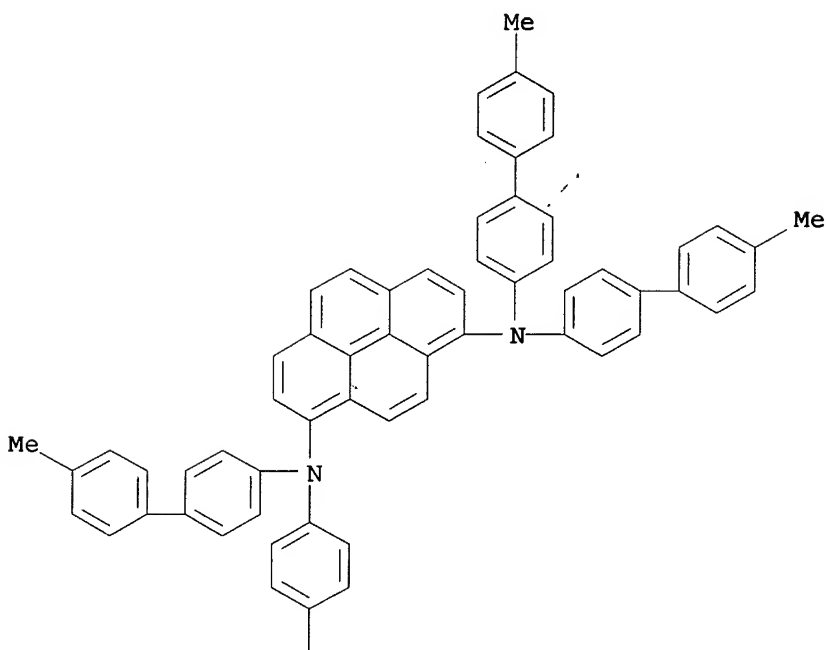
USES (Uses)

(charge-transporting compds. contained in electrophotog. photoreceptor)

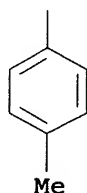
RN 213531-10-3 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(4'-methyl[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM G03G005-06
ICS G03G005-06; C07C211-54; C07C217-92; C07C323-37
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 65419-39-8 70366-84-6 70367-14-5 70419-90-8 72924-73-3
78021-10-0 98151-28-1 109326-23-0 118076-66-7 119564-52-2
119564-56-6 127845-61-8 129605-01-2 130746-03-1
130746-07-5 130746-08-6 131783-25-0 134305-56-9
134328-08-8 135071-75-9 135198-98-0 135722-66-6
136286-96-9 136454-73-4 136578-70-6 138510-84-6
138796-56-2 139154-13-5 139184-29-5 139905-72-9
142773-14-6 143764-54-9 143764-84-5 143877-77-4
146966-98-5 146967-14-8 146967-28-4 158687-31-1
163969-28-6 163969-30-0 163969-34-4 163969-44-6
163969-51-5 163969-60-6 205262-45-9 205327-08-8

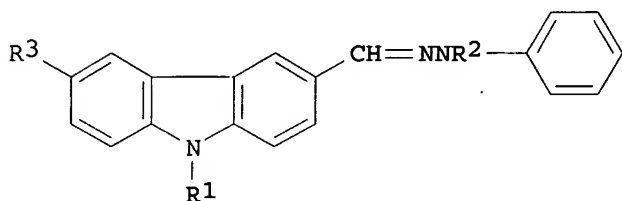
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213530-94-0	213530-95-1	213530-96-2	213530-97-3
213530-98-4	213530-99-5	213531-00-1	213531-01-2
213531-02-3	213531-03-4	213531-04-5	213531-05-6
213531-06-7	213531-07-8	213531-08-9	213531-09-0
213531-10-3	213531-11-4	213531-12-5	213531-13-6
213531-14-7	213531-15-8	213531-16-9	213531-17-0

RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)

(charge-transporting compds. contained in electrophotog.
photoreceptor)

L134 ANSWER 23 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1998:397951 Document No. 129:128951 Electrophotographic
photoreceptors containing organic charge transfer agents. Sakon,
Yota; Umeda, Minoru; Ikegami, Takaaki; Kurimoto, Eiji (Ricoh Co.,
Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10161329 A2 19980619
Heisei, 238 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1996-339006 19961204.

GI



I

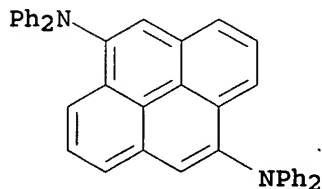
AB The title electrophotog. photoreceptor contains a charge transfer agent of the formula I (R1 = lower alkyl, 2-chloroethyl, 2-hydroxyethyl; R2 = lower alkyl, Bz, Ph; R3 = H, halo, lower alkyl, lower alkoxy, dialkylamino, nitro) and one or more organic charge transfer agents selected from compds. defined by 25 Markush structures. The photoreceptor shows high sensitivity and durability.

IT 210180-58-8

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge transfer agent)

RN 210180-58-8 HCAPLUS

CN 4,9-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 29092-50-0 70367-14-5 70419-54-4 70419-79-3 75238-79-8
77702-58-0 77702-81-9 81851-91-4 84678-56-8 119564-30-6
124537-95-7 129988-45-0 134305-42-3 134305-76-3
135199-01-8 138510-84-6 138796-79-9 139184-18-2
139905-75-2 140243-60-3 141388-60-5 141388-61-6
141433-47-8 142773-15-7 143764-44-7 143764-55-0
143764-74-3 146967-07-9 146967-27-3 158687-29-7
158687-30-0 163969-27-5 163969-30-0 163969-42-4
201362-47-2 205262-44-8 205262-49-3 205327-12-4
206661-59-8 210180-29-3 210180-30-6 210180-31-7
210180-32-8 210180-33-9 210180-34-0 210180-35-1
210180-36-2 210180-37-3 210180-38-4 210180-39-5
210180-40-8 210180-41-9 210180-42-0 210180-43-1
210180-44-2 210180-45-3 210180-46-4 210180-47-5
210180-48-6 210180-49-7 210180-50-0 210180-51-1
210180-52-2 210180-53-3 210180-54-4 210180-55-5
210180-56-6 210180-57-7 210180-58-8 210180-59-9
210180-60-2 210180-61-3 210180-62-4 210180-63-5
210180-64-6 210180-65-7 210180-66-8
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge transfer agent)

L134 ANSWER 24 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1998:219913 Document No. 128:263932 Electrophotographic photoreceptors using specific two-types of charge-transporting materials. Umata, Minoru; Ikegami, Takaaki; Kurimoto, Eiji; Mashio, Akiko (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10090924 A2 19980410 Heisei, 82 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-268027 19960918.

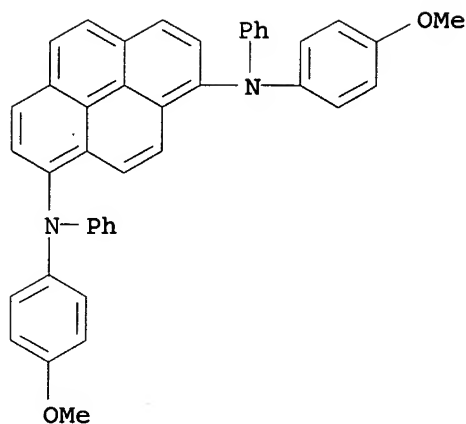
AB The title photoreceptors comprise a conductive support coated with a photosensitive layer containing Ar1CR1:CR2(CH:CH)nAr2NR3R4 [I; R1 = lower alkyl, aryl; R2-4 = H, lower alkyl, (substituted) aryl; Ar1 = aryl, Ar1 and R1 may form a ring; Ar2 = arylene; n = 0 or 1] and 1 compound selected from 7 types of aromatic compds. (having fused ring structure) (the structures are specified in the claim). The photosensitive layer may comprises a charge-generating layer containing a charge-generating material and a charge-transporting layer containing I and 1 selected from the 7 types of compds. or may be a monolayer-type layer containing a charge-generating material and a combination of the compds. The photoreceptors show high photosensitivity and durability in repeated use.

IT 205262-56-2

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptors using specific two-types of charge-transporting materials)

RN 205262-56-2 HCAPLUS

CN 1,8-Pyrenediamine, N,N'-bis(4-methoxyphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



IC ICM G03G005-06
ICS G03G005-06
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 1679-98-7 15008-36-3 36217-56-8 41611-93-2 41693-81-6
59260-77-4 65272-89-1 70895-80-6 72924-73-3 78014-47-8
78014-48-9 84678-60-4 89114-90-9 89115-04-8 89115-06-0
95304-20-4 95304-26-0 95331-26-3 96009-74-4 97931-90-3
97931-97-0 97931-99-2 97932-03-1 98151-28-1 98647-34-8
109326-25-2 118076-60-1 118076-68-9 118076-69-0
125323-59-3 126713-98-2 128965-03-7 128965-04-8
129605-06-7 133461-58-2 134744-23-3 135071-73-7
135071-75-9 135071-76-0 135198-98-0 135199-01-8
137525-77-0 139184-14-8 139184-15-9 139184-23-9
142641-61-0 143764-51-6 143764-55-0 143764-57-2
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205262-36-8 205262-37-9 205262-38-0 205262-39-1
205262-40-4 205262-41-5 205262-42-6 205262-43-7
205262-44-8 205262-45-9 205262-46-0 205262-47-1
205262-48-2 205262-49-3 205262-50-6 205262-51-7
205262-52-8 205262-53-9 205262-54-0 205262-55-1
205262-56-2

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptors using specific two-types of charge-transporting materials)

L134 ANSWER 25 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1998:211295 Document No. 128:263742 organic electroluminescent devices with high durability and using N-phenylaminopyrene derivatives. Tamura, Shinichiro; Ichimura, Mari (Sony Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10088122 A2 19980407 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-240885 19960912.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

*

AB The devices, showing high luminance efficiency, contain N-phenylaminopyrene derivs. preferably represented by ≥ 1 of I-III [R1-3 = H, alkyl (oxy), halo, and/or (un)substituted Ph] as hole-transporting materials in emitting layers.

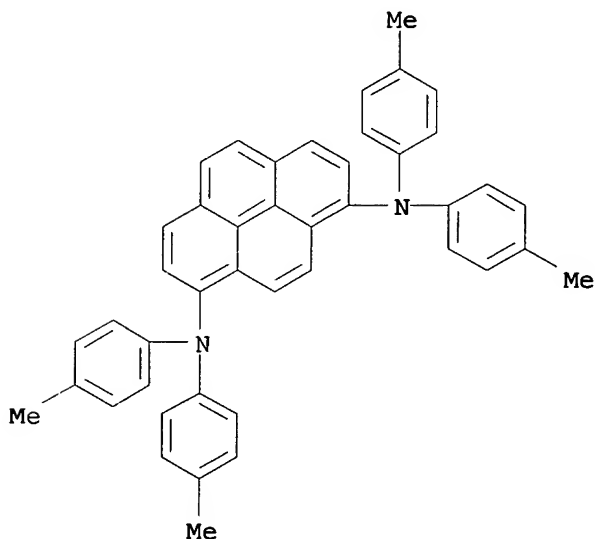
IT 142827-48-3P 205037-20-3P 205037-24-7P
205037-25-8P

RL: DEV (Device component use); PNU (Preparation, unclassified);
TEM (Technical or engineered material use); PREP (Preparation);
USES (Uses)

(in preparation of N-phenylaminopyrene derivs. for electroluminescent devices with excellent durability)

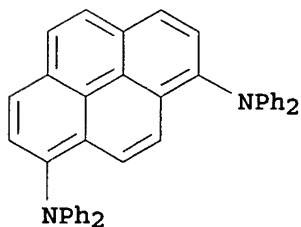
RN 142827-48-3 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 205037-20-3 HCAPLUS

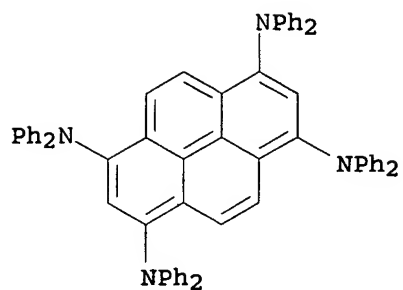
CN 1,8-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



RN 205037-24-7 HCAPLUS

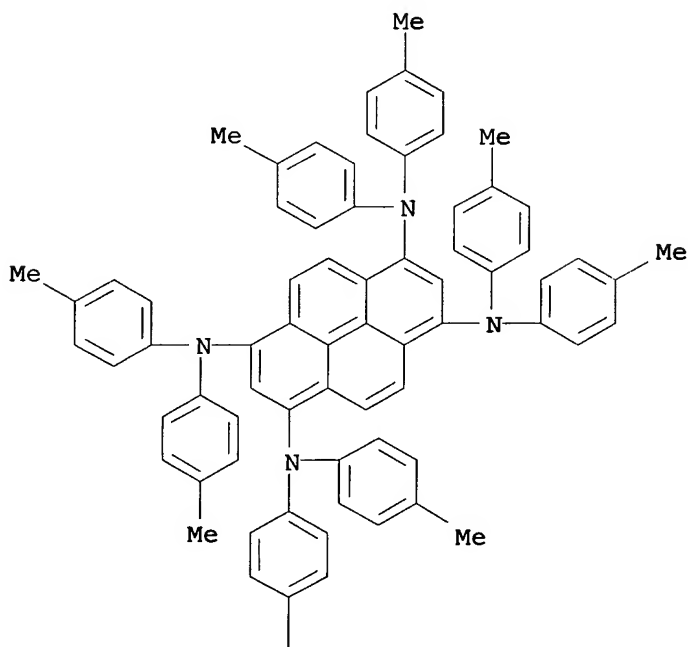
CN 1,3,6,8-Pyrenetetramine, N,N,N',N',N'',N'',N''',N'''-octaphenyl-

(9CI) (CA INDEX NAME)



RN 205037-25-8 HCAPLUS
 CN 1,3,6,8-Pyrenetetramine, N,N,N',N',N'',N'',N''',N'''-octakis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

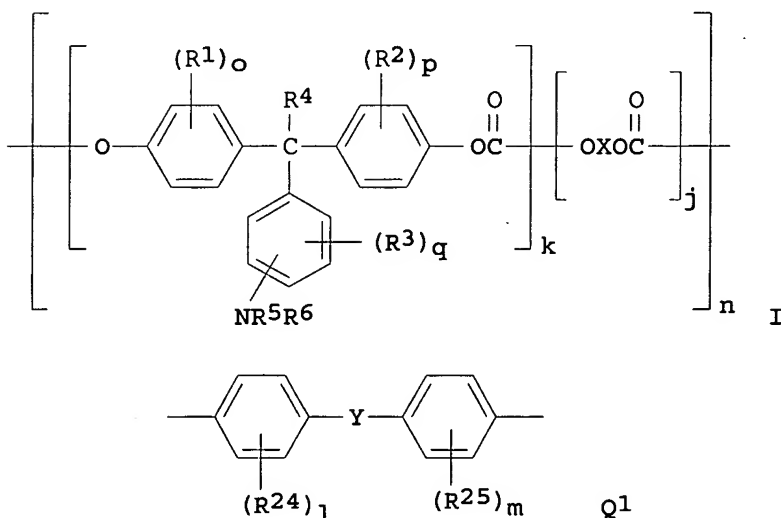


IC ICM C09K011-06

ICS H05B033-14; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25
 IT **Fluorescent dyes**
 (electroluminescent devices with high durability and using N-phenylaminopyrene derivs.)
 IT 142827-48-3P 205037-20-3P 205037-22-5P
 205037-23-6P 205037-24-7P 205037-25-8P
 RL: DEV (Device component use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (in preparation of N-phenylaminopyrene derivs. for electroluminescent devices with excellent durability)

L134 ANSWER 26 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1997:796184 Document No. 128:108430 Electrophotographic photoreceptor using polycarbonate charge-transporting agent.
 Kishida, Koshi; Tamura, Hiroshi; Arami, Tatsuya; Suzuki, Tetsuo; Kami, Hidenori (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09319122 A2 19971212 Heisei, 129 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-151815 19960524.

GI



AB The title photoreceptor comprises a conductive support coated with a photosensitive layer containing a charge-generating agent, a low-mol.-weight charge-transporting agent, and a polymer charge-transporting agent I [R1-3 = (substituted) alkyl or halo; R4 = H or (substituted) alkyl; R5-6 = (substituted) aryl; o, p, q = 0-4; 0.1 ≤ k ≤ 1; 0 ≤ j ≤ 0.9; n = 5-5000; X = divalent (cyclic) aliphatic group, Q1 [R24, R25 =

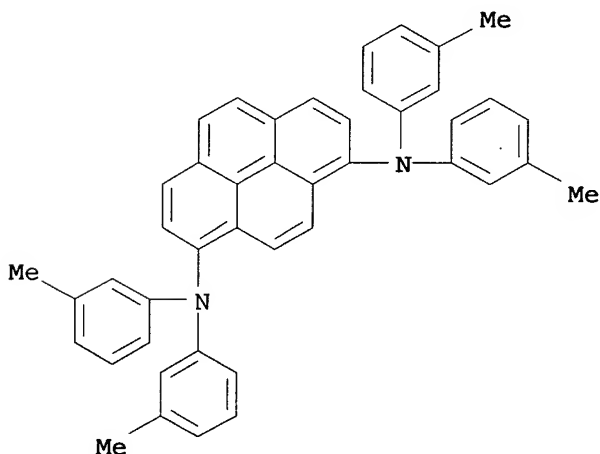
(substituted) alkyl, aryl, halo; l, m = 0-4; Y = single bond, C1-12 straight chain, branched or cyclic alkylene, O, S, SO, SO₂, CO, CO₂ZOCO (Z = divalent aliphatic group)], (CH₂)_a(SiR₂₆R₂₇)_bSiR₂₆R₂₇(CH₂)_a [a = 1-20; b = 1-2000; R₂₆, R₂₇ = (substituted) alkyl or aryl]]. The polymer charge-transporting agent may be [[OAr₂C(:CHAR₁NR₃R₄)Ar₃OCO]k(OXOCO)j]n, [[OAr₄C(:CHCH:CHAR₆NR₅R₆)Ar₅OCO]k(OXOCO)j]n, [[OAr₇CH((CH₂)_rAr₉NR₇R₈)Ar₈OCO]k(OXOCO)j]n, II, [[OAr₁₅(Y₁Ar₁₃NR₁₁R₁₂)Y₃Ar₁₆(Y₂Ar₁₄NR₁₃R₁₄)OCO]k(OXOCO)j]n, [[OAr₁₈N(Ar₁₇CH:CR₁₅R₁₆)Ar₁₉OCO]k(OXOCO)j]n, [(OAr₂₀CH:CHAR₂₁NR₁₇Ar₂₂CH:CHAR₂₃OCO)k(OXOCO)j]n, [[OAr₂₄C(:CHAR₂₇NR₁₈R₁₉)Ar₂₅C(:CHAR₂₈NR₂₀R₂₁)Ar₂₆OCO]k(OXOCO)j]n or [(OAr₂₉NR₂₂Ar₃₀NR₂₃Ar₃₁OCO)k(OXOCO)j]n [R₃-14, R₁₇-23 = (substituted) aryl; R₁₅, R₁₆ = H or (substituted) aryl, R₁₅ and R₁₆ may form a ring; Ar₁-31 = arylene; Y₁-3 = single bond, (substituted) alkylene, (substituted) cycloalkylene, (substituted) alkylene ether, O, S, vinylene; X₁, X₂ = (substituted) ethylene or vinylene; r = 1-5; X, k, j, and n are same meanings as shown in I]. The photoreceptor shows high abrasion resistance in repeated use, high photosensitivity, and low residual potential.

IT 201353-27-7

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor using polycarbonate and low.-mol.-weight charge-transporting agents)

RN 201353-27-7 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-07

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

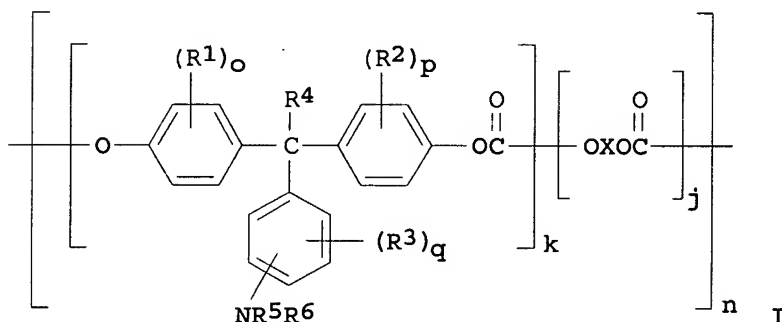
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79096-24-5 84271-48-7 84687-99-0 88740-81-2 88740-82-3
89114-90-9 124373-59-7 129970-69-0 129988-45-0 131625-67-7
133637-75-9 138796-27-7 139451-71-1 142773-15-7
157244-37-6 174830-28-5 184104-78-7 198983-20-9

201056-39-5 201056-63-5 201136-22-3 201148-52-9
 201154-28-1 201337-04-4 201337-49-7 201337-51-1
201353-27-7 201354-75-8 201356-83-4 201362-35-8
 201362-36-9 201362-38-1 201362-42-7 201362-43-8
 201362-45-0 201362-46-1 201362-47-2

RL: DEV (Device component use); USES (Uses)
 (electrophotog. photoreceptor using polycarbonate and
 low.-mol.-weight charge-transporting agents)

L134 ANSWER 27 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1997:796180 Document No. 128:108427 Electrophotographic
 photoreceptor using polycarbonate charge-transporting agent.
 Kishida, Hiroshi; Arami, Tatsuya; Tamura, Hiroshi; Suzuki, Tetsuo;
 Kami, Hidenori (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho
 JP 09319114 A2 19971212 Heisei, 82 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 1996-151814 19960524.

GI



AB The title photoreceptor, comprising a conductive support laminated with a charge-generating layer and a charge-transporting layer containing a polymer charge-transporting agent I [R1-3 = (substituted) alkyl or halo; R4 = H or (substituted) alkyl; R5, R6 = (substituted) aryl; o, p, q = 0-4; 0.1 ≤ k ≤ 1; 0 ≤ j ≤ 0.9; n = 5-5000; X = divalent (cyclic) aliphatic group, Q1 [R101, R102 = (substituted) alkyl, aryl, halo; l, m = 0-4; Y = single bond, C1-12 straight chain, branched or cyclic alkylene, O, S, SO, SO2, CO, CO2ZOCO (Z = divalent aliphatic group)], (CH2)a(SiR103R104O)bSiR103R104(CH2)a [a = 1-20; b = 1-2000; R103, R104 = (substituted) alkyl or aryl]], contains a charge-injecting layer based on a low-mol.-weight charge-transporting agent between these layers. The polymer charge-transporting agent may be
 [[OAr2C(:CHAR1NR7R8)Ar3OCO]k(OXOCO)j]n,
 [[OAr4C(:CHCH:CHAR6NR9R10)Ar5OCO]k(OXOCO)j]n,
 [[OAr7CH((CH2)pAr9NR11R12)Ar8OCO]k(OXOCO)j]n, II,
 [[OAr15(Y1Ar13NR15R16)Y3Ar16(Y2Ar14NR17R18)OCO]k(OXOCO)j]n,
 [[OAr18N(Ar17CH:CR19R20)Ar19OCO]k(OXOCO)j]n,
 [(OAr20CH:CHAR21NR22Ar22CH:CHAR23OCO)k(OXOCO)j]n,
 [[OAr24C(:CHAR27NR22R23)Ar25C(:CHAR28NR24R25)Ar26OCO]k(OXOCO)j]n
 or [(OAr29NR26Ar30NR27Ar31OCO)k(OXOCO)j]n [R7-18, R21-27 = (substituted) aryl; R19, R20 = H or (substituted) aryl, R19 and

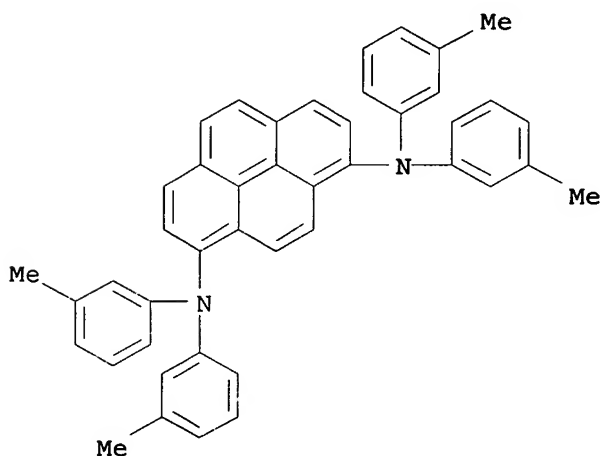
R20 may form a ring; Ar1-31 = arylene; Y1-3 = single bond, (substituted) alkylene, (substituted) cycloalkylene, (substituted) alkylene ether, O, S, vinylene; X1, X2 = (substituted) ethylene or vinylene; p = 1-5; X, k, j, and n are same meanings as shown in I]. The photoreceptor shows high photosensitivity and low residual potential.

IT 201353-27-7

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor with charge-injection layer containing charge-transporting agent)

RN 201353-27-7 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(3-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-07

ICS G03G005-043

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 1679-98-7 5043-92-5 13511-11-0, N,N-Bis(m-tolyl)benzenamine

15008-36-3 57609-72-0 75232-44-9 76185-65-4 79096-24-5

89114-90-9 124373-59-7 129988-45-0 134917-82-1 142773-15-7

201056-63-5 201353-27-7 201354-58-7 201354-59-8

RL: DEV (Device component use); USES (Uses)

(electrophotog. photoreceptor with charge-injection layer containing charge-transporting agent)

L134 ANSWER 28 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

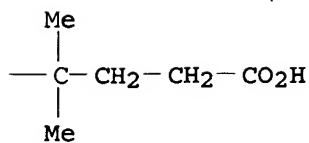
1996:684759 Document No. 125:342810 Organic electronic device using charge-transporting polyester. Seda, Katsumi; Imai, Akira; Iwasaki, Masahiro (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08208820 A2 19960813 Heisei, 31 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-197158 19950711. PRIORITY: JP 1994-282486 19941024; JP 1994-329853 19941206.

GI

CRN 183136-51-8
CMF C56 H56 N2 O4

CC(C)CCc1ccc(cc1)N(c2ccc(C)cc2)c3ccc4c(c3)c5ccc6c4c7ccc(N(c8ccc(C)cc8)CC)cc7cc65

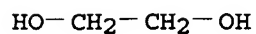
PAGE 1-B



CM 2

CRN 107-21-1

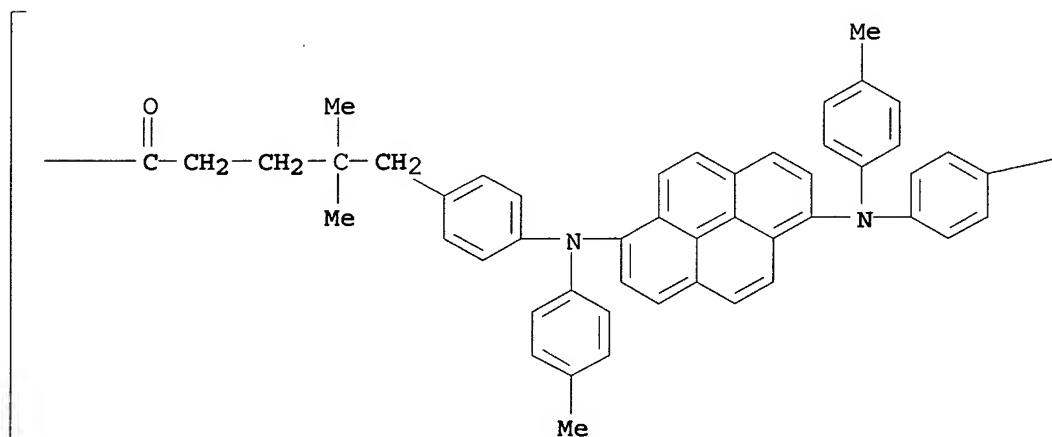
CMF C2 H6 O2



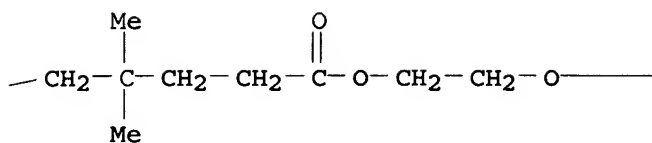
RN 183136-60-9 HCAPLUS

CN Poly[oxy-1,2-ethanediyl oxy(4,4-dimethyl-1-oxo-1,5-pentanediy)]-1,4-phenylene[(4-methylphenyl)imino]-1,6-pyrenediyl[(4-methylphenyl)imino]-1,4-phenylene(2,2-dimethyl-5-oxo-1,5-pentanediy)] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



n

IC ICM C08G063-685
 ICS C08G073-00; C08L067-03; G03G005-07; H01L051-00; H01L031-08;
 H01L051-10

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 38

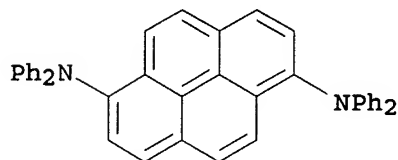
IT 183136-44-9P 183136-46-1P 183136-48-3P 183136-50-7P
 183136-52-9P 183136-54-1P 183136-56-3P 183136-57-4P
 183136-58-5P 183136-59-6P 183136-60-9P 183136-61-0P
 183136-62-1P
 RL: DEV (Device component use); PNU (Preparation, unclassified);
 PREP (Preparation); USES (Uses)
 (in preparation of charge-transporting polyester for electrophotog.
 photoreceptor)

L134 ANSWER 29 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1996:641144 Document No. 125:288355 Organic electroluminescent
 device. Hosokawa, Chishio; Kawamura, Hisayuki (Idemitsu Kosan Co,
 Japan). Jpn. Kokai Tokkyo Koho JP 08199162 A2 19960806 Heisei, 25
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-10918
 19950126.

AB An organic electroluminescent device, having prolonged stability,
 suited for use as displays, wherein the recombination region
 and/or electroluminescent region, sandwiched between a pair of
 electrodes, contains 0.1-8 % of **fluorescent** dopant(s)
 selected from the compound represented by Ar1N(Ar2)Ar3 [Ar1-3 =
 C1-10 alkyl, C6-30 aryl, and heterocyclic; one of Ar1-3 is
 C≥12 condensed polycyclic hydrocarbon] and
 Ar4(Ar6)NAr8N(Ar7)Ar5 [Ar4-7 = C1-10 alkyl, C6-30 aryl, and
 heterocyclic; Ar8 = C6-30 arylene, or divalent heterocyclic; one
 of Ar4-8 is C≥12 condensed polycyclic hydrocarbon].

IT 76656-53-6
 RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)
 (organic electroluminescent device)

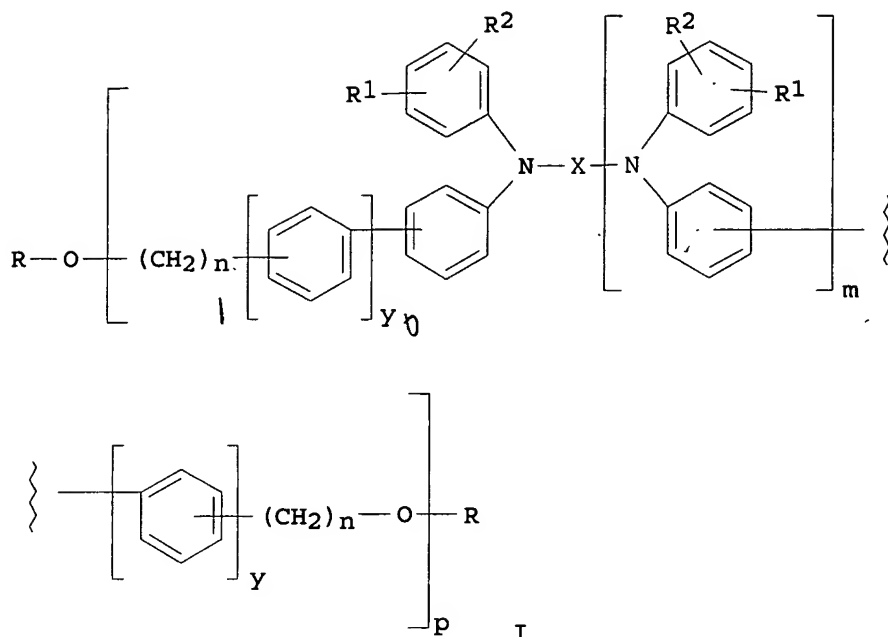
RN 76656-53-6 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST org electroluminescent device **fluorescent** dopant
IT **Fluorescent** substances
(organic electroluminescent device)
IT 70782-27-3 **76656-53-6** 123847-85-8 124729-98-2.
139255-20-2 139255-24-6 142289-08-5 182426-74-0
182426-75-1
RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)
(organic electroluminescent device)

L134 ANSWER 30 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1996:428418 Document No. 125:100043 Charge-transporting polymer,
process for producing the same, and organic electronic device
containing the same. Iwasaki, Masahiro; Imai, Akira; Nukada,
Katsumi; Sato, Katsuhiro (Fuji Xerox Co., Ltd., Japan). Eur. Pat.
Appl. EP 710893 A1 19960508, 42 pp. DESIGNATED STATES: R: DE,
FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1995-116439
19951018. PRIORITY: JP 1994-282485 19941024; JP 1995-268265
19951017.

GI



AB A charge-transporting polymer represented by formula I wherein R represents a hydrogen atom, an alkyl group, an acyl group or -CONHR₃ wherein R₃ represents an alkyl group or a substituted or unsubstituted aryl group; R₁ and R₂, which may be the same or different, each represents a hydrogen atom, an alkyl group, an alkoxy group, a substituted amino group, a halogen atom, or a substituted or unsubstituted aryl group; X represents a substituted or unsubstituted divalent aromatic group; y represents 0 or 1; m represents 0 or 1; n represents an integer of 1 to 5; and p represents an integer of 5 to 5000, a process for producing the same, and an organic electron device containing the same, such as an electrophotog. photoreceptor, are disclosed. The charge-transporting polymer is excellent in solubility, film-forming properties, mech. strength, pos. hole mobility, and stability to repeated use.

IT 178611-78-4

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(charge-transporting agent for electrophotog. photoreceptor)

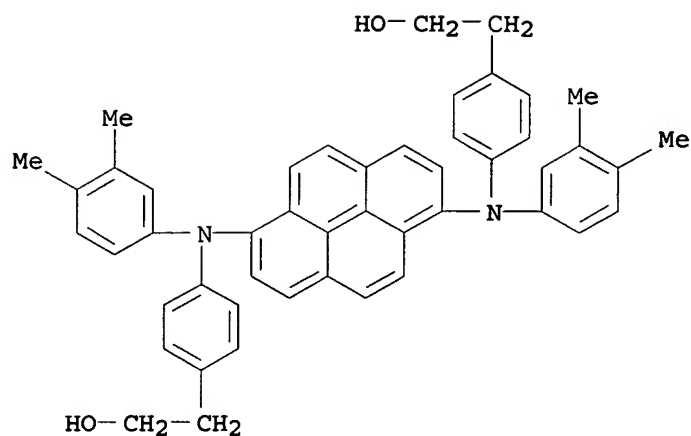
RN 178611-78-4 HCAPLUS

CN Benzeneethanol, 4,4'-[1,6-pyrenediylbis[(3,4-dimethylphenyl)imino]]bis-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 178611-77-3

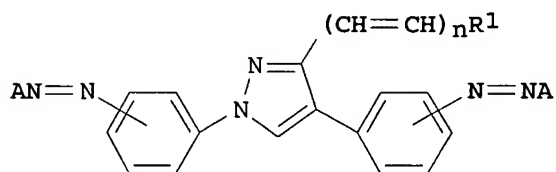
CMF C48 H44 N2 O2



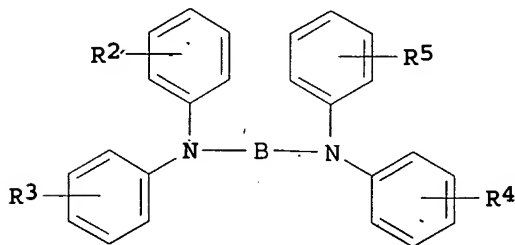
IC ICM G03G005-07
ICS C08G065-38
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 178611-67-1 178611-73-9 178611-74-0 **178611-78-4**
178611-80-8 178611-82-0 178611-84-2
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(charge-transferring agent for electrophotog. photoreceptor)

L134 ANSWER 31 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1995:746415 Document No. 123:213116 Electrophotographic photoreceptors containing bisazo pigment. Sumita, Keisuke; Kadoi, Mikio; Iwasaki, Hiroaki; Oki, Tsuneo (Mita Industrial Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07120949 A2 19950512 Heisei, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-159312 19920618.

GI



I



II

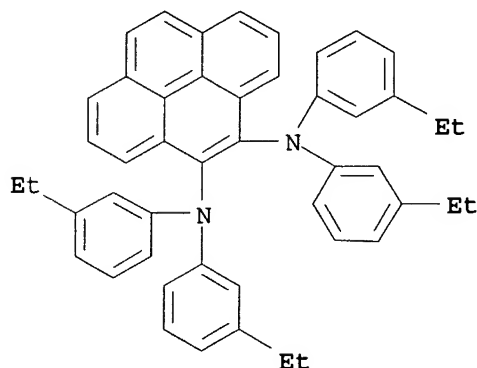
AB The photoreceptors comprise a conductive substrate coated with a photosensitive layer containing a bisazo pigment I [A = coupler residue; R1 = H, (substituted) alkyl, (substituted) aryl, (substituted) heterocycle; n = 0, 1] as a charge-generating material and a diamine compound II [R2-5 = H, halo, (substituted) alkyl, (substituted) alkoxy, (substituted) aryl; B = (substituted) naphthyl, (substituted) anthryl, (substituted) phenanthryl, (substituted) pyrenyl, R2-5 may substitute as may as possible] as a charge-transporting material. The photoreceptors show improved electrophotog. properties.

IT 167893-83-6

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor charge-transporting agent)

RN 167893-83-6 HCAPLUS

CN 4,5-Pyrenediamine, N,N,N',N'-tetrakis(3-ethylphenyl)- (9CI) (CA INDEX NAME)



IC ICM G03G005-06

ICS G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 151026-65-2 167893-73-4 167893-74-5 167893-75-6

167893-76-7 167893-77-8 167893-78-9 167893-79-0

167893-80-3 167893-81-4 167893-82-5 167893-83-6

RL: DEV (Device component use); USES (Uses)

(electrophotog. photoreceptor charge-transporting agent)

L134 ANSWER 32 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1995:623514 Document No. 123:22137 Electrophotographic

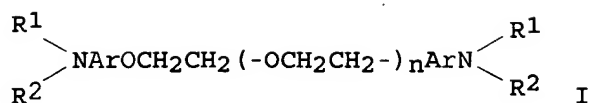
photoreceptor. Umeda, Minoru; Niimi, Tatsuya (Ricoh Kk, Japan).

Jpn. Kokai Tokkyo Koho JP 07072634 A2 19950317 Heisei, 130 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-294803 19931029.

PRIORITY: JP 1993-177394 19930624.

GI



AB In the title electrophotog. photoreceptor comprising a charge-generating layer and a charge-transporting layer on an elec. conductive support, the charge-generating layer contains I (Ar = phenylene, biphenylene; R1,2 = alkyl, aryl; n = 1-4), or other compds. specified. This photoreceptor shows high sensitivity and good chargeability.

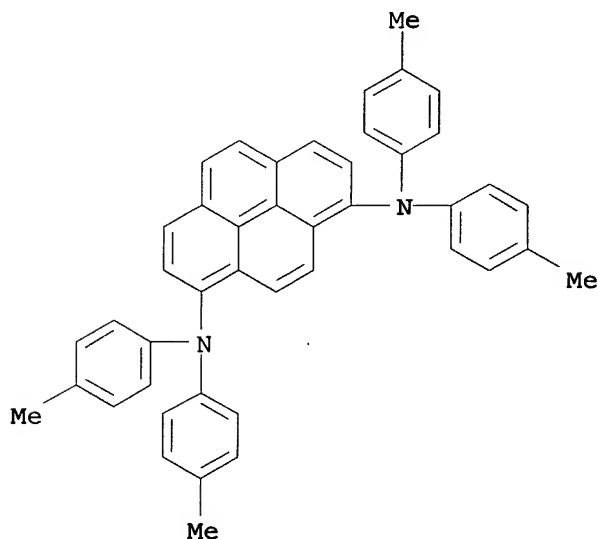
IT 142827-48-3 163969-53-7 163969-54-8

RL: DEV (Device component use); USES (Uses)

(electrophotog. photoreceptor charge-generating layer from)

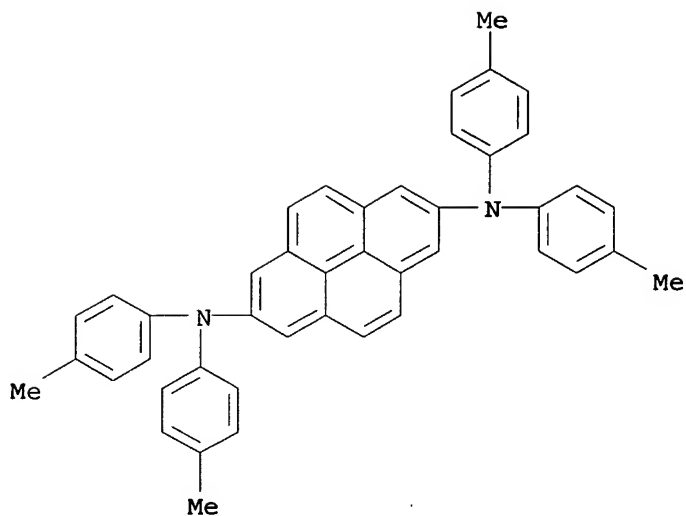
RN 142827-48-3 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl) - (9CI) (CA INDEX NAME)

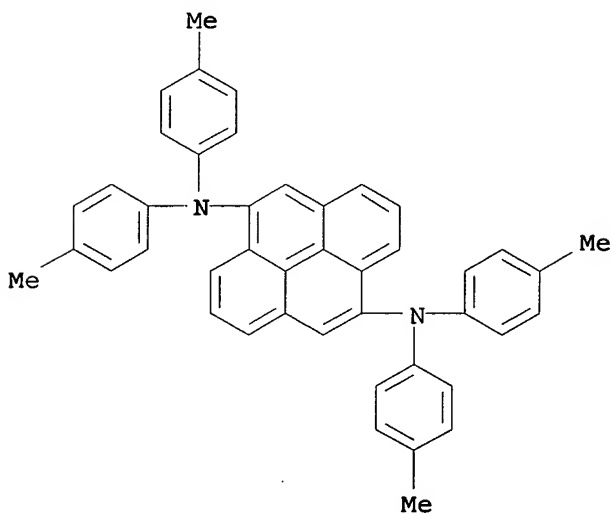


RN 163969-53-7 HCAPLUS

CN 2,7-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl) - (9CI) (CA INDEX NAME)



RN 163969-54-8 HCAPLUS
 CN 4,9-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl) - (9CI) (CA
 INDEX NAME)



IC ICM G03G005-047
 ICS G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 38764-40-8 110182-74-6 128965-02-6 128965-03-7 128965-05-9
 129605-02-3 129605-04-5 129970-67-8 129970-69-0
 129988-45-0 130746-03-1 130746-04-2 130746-11-1
 131625-67-7 134917-81-0 134917-82-1 136454-96-1
 136578-70-6 138510-79-9 138510-80-2 138510-83-5
 139184-14-8 139184-19-3 139184-25-1 139184-31-9

139184-32-0	139184-33-1	139905-63-8	139905-65-0
139905-66-1	139905-70-7	139905-72-9	139905-76-3
141919-02-0	141919-24-6	142641-61-0	142773-13-5
142827-48-3	143877-69-4	143877-71-8	143877-75-2
143877-76-3	143877-77-4	152594-07-5	158687-31-1
163969-27-5	163969-28-6	163969-29-7	163969-30-0
163969-31-1	163969-32-2	163969-33-3	163969-34-4
163969-35-5	163969-36-6	163969-37-7	163969-38-8
163969-39-9	163969-40-2	163969-41-3	163969-42-4
163969-43-5	163969-44-6	163969-45-7	163969-46-8
163969-47-9	163969-48-0	163969-49-1	163969-50-4
163969-51-5	163969-52-6	163969-53-7	
163969-54-8	163969-55-9	163969-56-0	163969-57-1
163969-58-2	163969-59-3	163969-60-6	163969-61-7
163969-62-8	163969-63-9	163969-64-0	163969-65-1
163969-66-2	163969-67-3		

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor charge-generating layer from)

L134 ANSWER 33 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1993:549178 Document No. 119:149178 Electroluminescent elements.
Onuma, Teruyuki; Shimada, Tomoyuki; Ota, Masabumi; Kawamura,
Fumio; Sakon, Hirota; Takahashi, Toshihiko (Ricoh Co., Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 04175395 A2 19920623 Heisei, 9
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-305405
19901110. PRIORITY: JP 1990-179355 19900706.

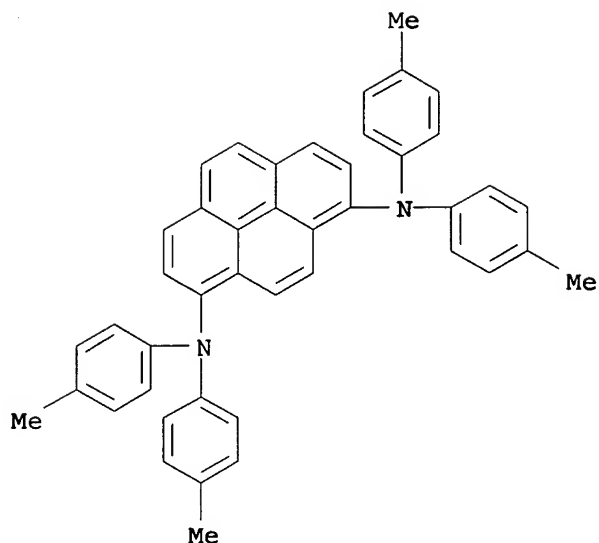
AB The element, suited for use in large-area displays, comprises a
cathode and an anode sandwiching ≥ 1 organic phosphor layer
containing A3(NA1A2)_n [A1,2 = (substituted) alkyl, (substituted) aryl;
A3 = (substituted) vinyl; n = 1,2]. The element has a long-life
stability with a low threshold voltage.

IT **142827-48-3**

RL: PRP (Properties)
(electroluminescent phosphors from, green emitting)

RN 142827-48-3 HCAPLUS

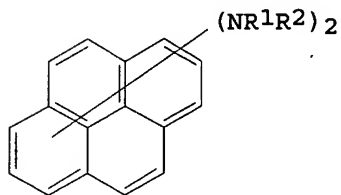
CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA
INDEX NAME)



IC ICM C09K011-00
 ICS C09K011-06; H05B033-14
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74
 IT 139905-74-1 **142827-48-3**
 RL: PRP (Properties)
 (electroluminescent phosphors from, green emitting)

L134 ANSWER 34 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1992:560887 Document No. 117:160887 Electrophotographic photoreceptors using diaminopyrene compound charge-transporting agent. Shimada, Tomoyuki; Sasaki, Masaomi; Ariga, Tamotsu (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04118658 A2 19920420 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-175561 19900702. PRIORITY: JP 1990-140887 19900530.

GI



I

AB The photoreceptors comprise a conductive support with a coating of a photosensitive layer containing ≥ 1 diaminopyrene compound I [R1-2 = (substituted) alkyl or aryl, except 1,6-diaminopyrene]. The photoreceptors show good photosensitivity, thermal resistance, and mech. strength. Thus, an Al vapor-deposited polyester film

was coated with a charge-generating layer containing Diane Blue and a charge-transporting layer containing N,N,N',N'-tetrakis(4-methylphenyl)-1,3-diaminopyrene to give a photoreceptor.

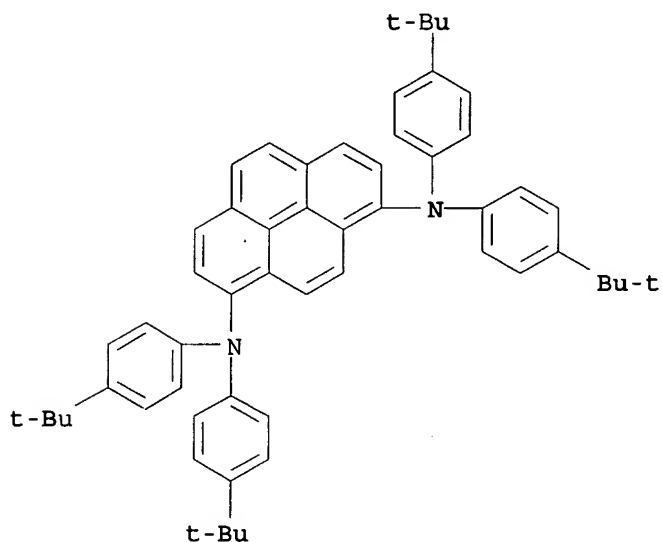
IT 143141-28-0 143141-30-4 143141-31-5

RL: USES (Uses)

(charge-transporting agent, electrophotog. photoreceptor using)

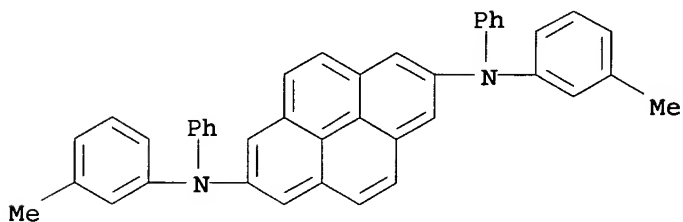
RN 143141-28-0 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis[4-(1,1-dimethylethyl)phenyl] - (9CI) (CA INDEX NAME)



RN 143141-30-4 HCAPLUS

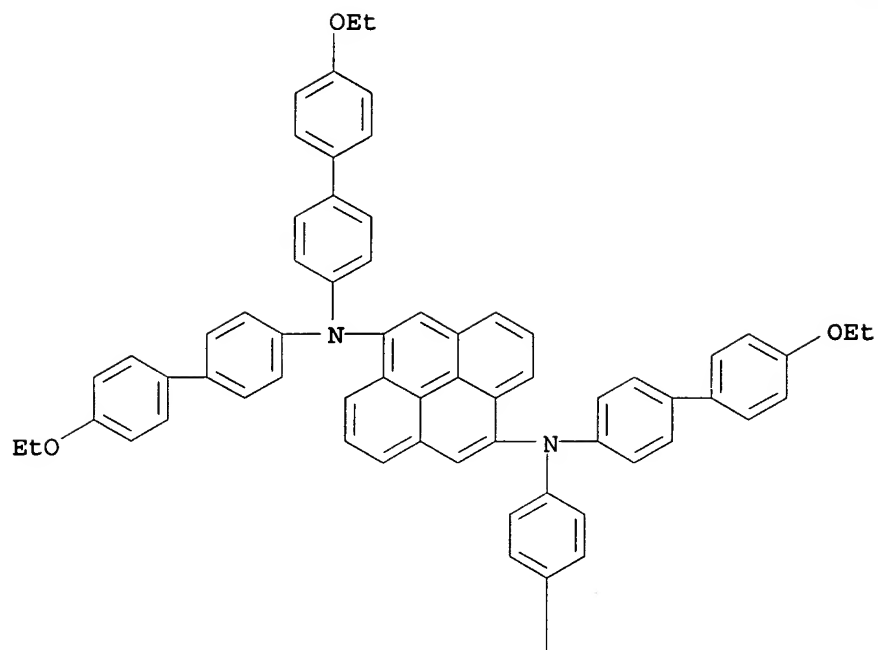
CN 2,7-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



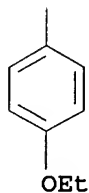
RN 143141-31-5 HCAPLUS

CN 4,9-Pyrenediamine, N,N,N',N'-tetrakis(4'-ethoxy[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)

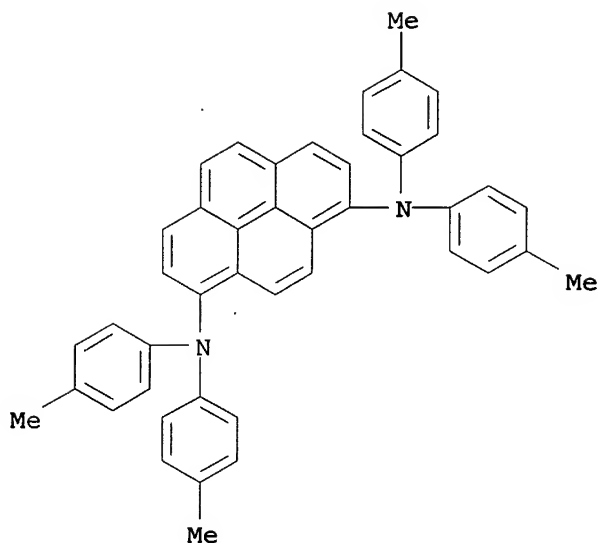
PAGE 1-A



PAGE 2-A



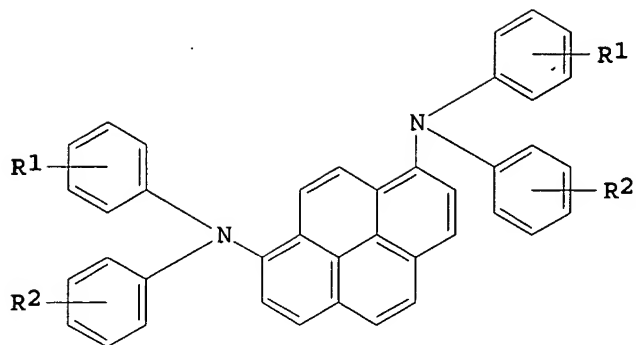
IT 142827-48-3P
RL: PREP (Preparation)
(preparation of, as charge-transporting agent, electrophotog.
photoreceptor using)
RN 142827-48-3 HCAPLUS
CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl) - (9CI) (CA
INDEX NAME)



IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 IT 142641-61-0 142641-62-1 143141-27-9 **143141-28-0**
 143141-29-1 **143141-30-4** 143141-31-5
 143141-32-6
 RL: USES (Uses)
 (charge-transporting agent, electrophotog. photoreceptor using)
 IT **142827-48-3P**
 RL: PREP (Preparation)
 (preparation of, as charge-transporting agent, electrophotog.
 photoreceptor using)

L134 ANSWER 35 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1992:500975 Document No. 117:100975 1,8-Diaminopyrene compounds for
 electrophotographic photoconductors. Shimada, Tomoyuki; Sasaki,
 Masaomi; Ariga, Tamotsu (Ricoh Co., Ltd., Japan). Jpn. Kokai
 Tokkyo Koho JP 04036264 A2 19920206 Heisei, 5 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1990-138710 19900529.

GI

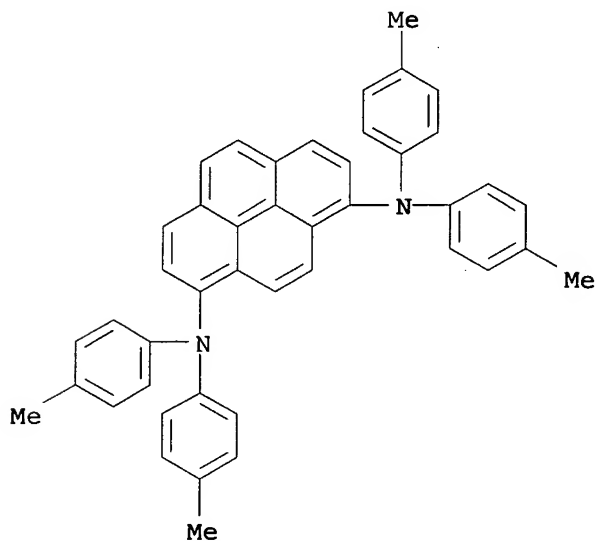


AB The title compds. I [R1-2 = H, alkyl, alkoxy, halo, (un)substituted Ph] are prepared I are useful as charge-transporting agents in electrophotog. photosensitizers.

IT 142827-48-3P
 RL: PREP (Preparation)
 (preparation of, charge-transporting agent, for electrophotog. photoconductors)

RN 142827-48-3 HCAPLUS

CN 1,8-Pyrenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM C07C211-61
 ICS G03G005-06

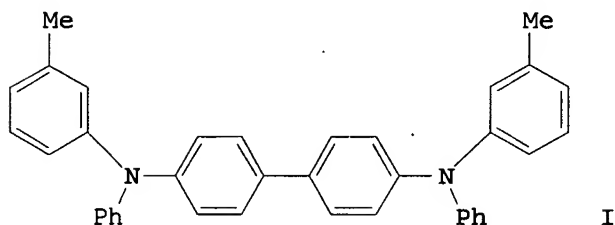
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25

IT 142827-48-3P
 RL: PREP (Preparation)

(preparation of, charge-transporting agent, for electrophotog.
photoconductors)

L134 ANSWER 36 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1989:231258 Document No. 110:231258 Process for preparing
arylamines. Turner, S. Richard; Yanus, John F.; Renfer, Dale S.
(Xerox Corp., USA). U.S. US 4764625 A 19880816, 10 pp.
Cont.-in-part of U.S. Ser. No. 215,610, abandoned. (English).
CODEN: USXXAM. APPLICATION: US 1984-639032 19840809. PRIORITY:
US 1980-118147 19800204; US 1980-215610 19801212.

GI



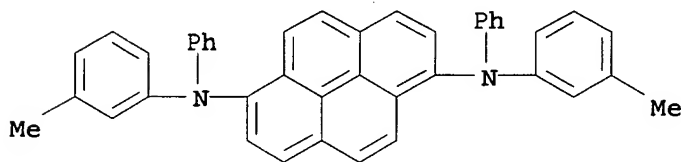
AB An improved process for preparing tertiary amines by condensation of
secondary amines with mono- and diiodoarenes, comprises conducting
the condensation in presence of KOH, a Cu catalyst, and an inert
saturated C13-15 aliphatic hydrocarbon mixture having an initial b.p. of
≥170°, in an inert atmosphere at 120-190°, for a
time sufficient to complete the reaction. The use of KOH and the
inert hydrocarbon solvent yields a relatively pure product. A
mixture of (4-IC6H4)2, 3-MeC6H4NPh2, KOH flake, Cu powder and
Soltrol-170 was maintained under an inert atmosphere and heated to
160° for 5 h to give 85% I. Using a different base,
different catalyst, or a noninert solvent, resulted in lower yield
and extended reaction time.

IT 76656-51-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 76656-51-4 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
(CA INDEX NAME)



IC ICM C07C087-64

ICS C07C087-58; C07C087-56; C07C087-54

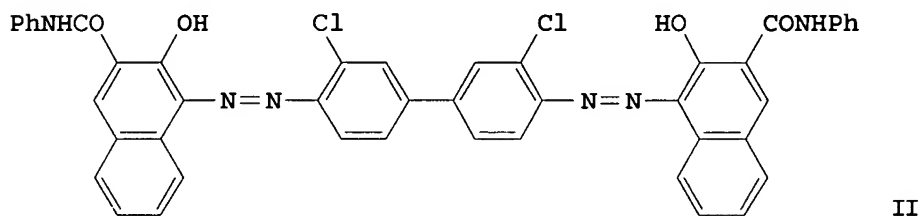
INCL 548442000

CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 603-34-9P 4316-54-5P 65181-78-4P **76656-51-4P**
78774-91-1P 80223-28-5P 80237-35-0P 120904-76-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

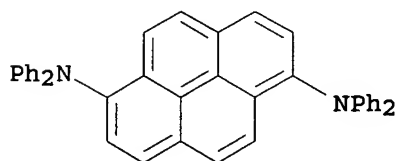
L134 ANSWER 37 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
1987:76105 Document No. 106:76105 Laminated sensitive materials in
electrophotography. Ishikawa, Shozo; Fujimura, Naoto (Canon K.
K., Japan). Jpn. Kokai Tokkyo Koho JP 61129648 A2 19860617 Showa,
13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-250618
19841129.

GI



AB Laminated sensitive materials in electrophotog. contain
pos.-hole-transferable charge-transport layers containing
charge-transport materials of the formula $RNR_1ZNR_2R_3$ (I; R-R₃ =
alkyl, aralkyl, aryl; Z = arylene) and charge-generating layers
containing photoconductive azo dyes. The materials show good
sensitivity and durability. Thus, a laminated sensitive material
prepared by using the charge-transport material I (R-R₃ = Ph; Z =
p-phenylene) and the azo dye II was applied in electrostatic
copying to show good pos.-charging properties and good sensitivity
and durability.

IT **76656-53-6**
RL: USES (Uses)
(electrophotog. photoconductor with charge-transport material
from)
RN 76656-53-6 HCAPLUS
CN 1,6-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM G03G005-04
ICS H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)

IT 1679-98-7 14118-16-2 15546-43-7 27919-85-3 57609-72-0
 65181-77-3 73276-70-7 **76656-53-6** 78916-13-9
 79183-73-6 79183-77-0 83890-47-5 97483-34-6 105465-12-1
 105465-18-7 106614-54-4 106614-55-5 106614-56-6
 106614-57-7

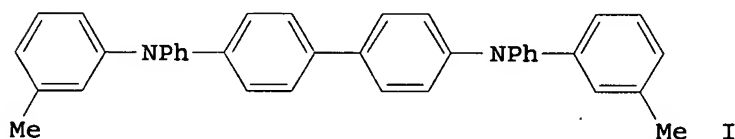
RL: USES (Uses)

(electrophotog. photoconductor with charge-transport material from)

L134 ANSWER 38 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN

1982:19802 Document No. 96:19802 Arylamines. Turner, Richard S.; Renfer, Dale S.; Yanus, John F. (Xerox Corp. , USA). Eur. Pat. Appl. EP 34425 A2 19810826, 12 pp. DESIGNATED STATES: R: DE, FR, GB, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1981-300388 19810130. PRIORITY: US 1980-118147 19800204; US 1980-215610 19801212.

GI



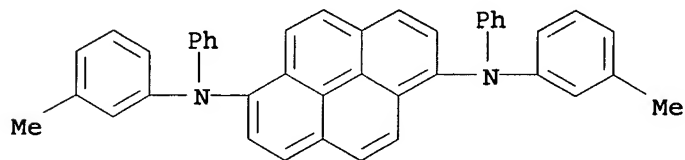
AB Chromatic tertiary amines were prepared by condensing mono- or disecundary amines and diiodoaryl aryl compds. in the presence of KOH and Cu at 120°-190°. Thus, 4-IC₆H₄C₆H₄I-4 was treated with 3-MeC₆H₄NHPh in the presence of KOH and Cu at 160° for 5 h to give 85% I.

IT **76656-51-4P**

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RN 76656-51-4 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)



IC C07C085-04; C07C087-50; C07C087-64; C07C087-58; C07D209-88;
 C08G073-02

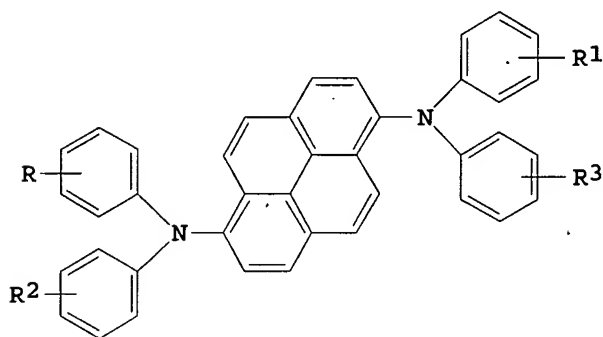
CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 4316-54-5P 65181-78-4P **76656-51-4P** 78774-91-1P
 80223-28-5P 80223-29-6P 80237-34-9P 80237-35-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

L134 ANSWER 39 OF 39 HCAPLUS COPYRIGHT 2005 ACS on STN
 1981:93632 Document No. 94:93632 Xerographic process and apparatus.
 Turner, S. Richard; Yanus, John F.; Pai, Damodar M. (Xerox Corp.,
 USA). Ger. Offen. DE 3004339 19801113, 34 pp. (German). CODEN:
 GWXXBX. APPLICATION: DE 1980-3004339 19800206.

GI



AB A photoconductive member for xerog. is described. The member, which is especially useful in cyclic imaging, has a photoconductor layer composed of a hole-injecting photoconductor and a charge transport layer from a polycarbonate resin containing 25-75% of I (R, R1, R2, R3 = H, C1-4 alkyl, halo, or Ph) dispersed therein. These photoconductive members remain flexible and keep their elec. characteristics after a large number of cyclic uses. Thus, an aluminized poly(ethylene terephthalate) film was coated with a layer of Polyester 4900 and then with a 0.5 μ layer of amorphous Se. Upon the Se surface a 2:3 mixture of N,N'-diphenyl-N,N'-bis(3-methylphenyl)-1,6-pyrenyldiamine and Makralon in CHCl₂ was coated to give a 20 μ thick transport layer. When used in a Xerox copier (Model D) the plate gave satisfactory copies.

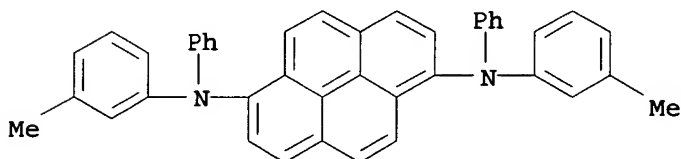
IT 76656-51-4 76656-53-6D, derivs.

RL: USES (Uses)

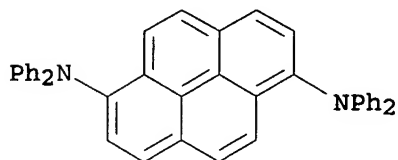
(electrophotog. plates with charge-transport layer containing polycarbonate and)

RN 76656-51-4 HCAPLUS

CN 1,6-Pyrenediamine, N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI)
 (CA INDEX NAME)

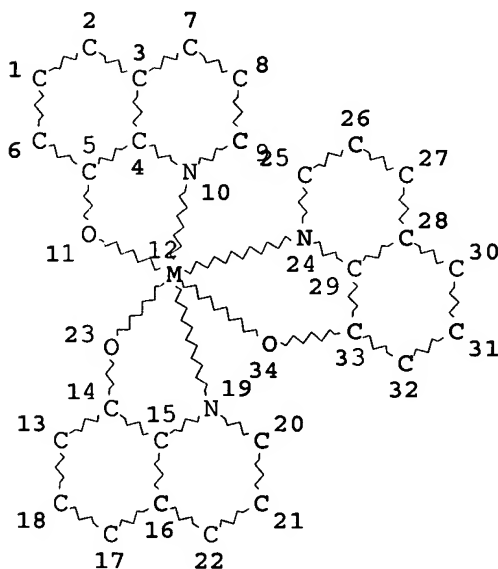


RN 76656-53-6 HCAPLUS
 CN 1,6-Pyrenediamine, N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



IC G03G005-082
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)
 IT 76656-51-4 76656-53-6D, derivs.
 RL: USES (Uses)
 (electrophotog. plates with charge-transport layer containing polycarbonate and)

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 L59 STR



NODE ATTRIBUTES:
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE
 L61 1968 SEA FILE=REGISTRY SSS FUL L59

L62 337 SEA FILE=REGISTRY ABB=ON PLU=ON L61 AND 1/AL
 L63 7 SEA FILE=REGISTRY ABB=ON PLU=ON C27H18ALN3O3/MF
 L64 330 SEA FILE=REGISTRY ABB=ON PLU=ON L62 NOT L63
 L71 4929 SEA FILE=HCAPLUS ABB=ON PLU=ON L63
 L72 248 SEA FILE=HCAPLUS ABB=ON PLU=ON L64
 L73 5944 SEA FILE=HCAPLUS ABB=ON PLU=ON L61
 L74 880 SEA FILE=HCAPLUS ABB=ON PLU=ON L73 NOT (L71 OR L72)
 L96 5944 SEA FILE=HCAPLUS ABB=ON PLU=ON (L71 OR L72 OR L73 OR L74)
 L104 QUE ABB=ON PLU=ON EL OR E(W)L OR L(W)E(W)D OR OLED OR ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR ORG#) (2A) LUM!N? OR LIGHT? (2A) (EMIT? OR EMISSION? OR SOURCE?)
 L105 QUE ABB=ON PLU=ON (LUMINES##### OR FLUORES? OR PHOSPHORES?)/BI,AB OR LED/IT OR PHOSPHOR# OR LUMIN?
 L109 4538 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND L96
 L110 3415 SEA FILE=HCAPLUS ABB=ON PLU=ON L105 AND L96
 L111 4768 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 OR L110
 L112 3185 SEA FILE=HCAPLUS ABB=ON PLU=ON L109 AND L110
 L113 98599 SEA FILE=HCAPLUS ABB=ON PLU=ON LAYER? (2A) (SINGLE OR ONE OR 1)
 L114 519 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L109
 L115 362 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L110
 L116 522 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L111
 L117 359 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND L112
 L118 5482 SEA FILE=HCAPLUS ABB=ON PLU=ON (ORG OR ORGANIC?) (4A) (ELECTROLUMIN? OR ELECTRO(A) LUMIN?) (4A) DISPLAY? OR OLED
 L119 105 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 AND L114
 L120 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 AND L115
 L121 105 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 AND L116
 L122 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 AND L117
 L123 73 SEA FILE=HCAPLUS ABB=ON PLU=ON L119 AND L120 AND L121 AND L122
 L124 1129 SEA FILE=HCAPLUS ABB=ON PLU=ON (ORG OR ORGANIC) (3A) LIGHT? (3A) EMIT? (3A) LAYER?
 L125 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L124 AND L123
 L126 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L124 AND L119
 L127 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L124 AND L120
 L128 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L124 AND L121
 L129 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L124 AND L122
 L130 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L124 AND L123
 L131 17 SEA FILE=HCAPLUS ABB=ON PLU=ON ((L126 OR L127 OR L128 OR L129 OR L130))
 L132 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L131 OR L125

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L132 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 2005:1027956 Document No. 143:315248 Organic light
 emitting device having improved stability. Raychaudhuri,
 Pranab K.; Madathil, Joseph K.; Liao, Liang-Sheng (Eastman Kodak
 Company, USA). U.S. Pat. Appl. Publ. US 2005208330 A1 20050922,
 17 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-804960
 20040319.

AB An OLED device is described comprising a reflective and

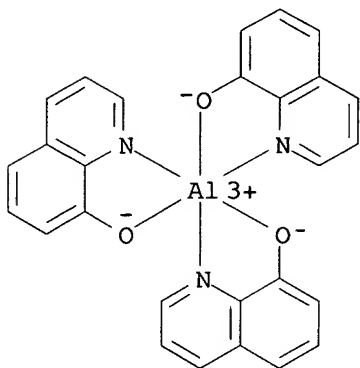
conductive bilayer anode including a metal or metal alloy or both; a hole-injecting structure over the reflective and conductive bilayer anode; at least **one organic layer** formed over the hole-injecting structure; and the reflective and conductive bilayer anode being configured to improve the stability of drive voltage.

IT 2085-33-8, Alq3

RL: DEV (Device component use); USES (Uses)
(transmission enhancement **layer**; **organic light emitting** device reflective bilayer anode structure having improved stability)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato- κ N1, κ O8)- (9CI) (CA INDEX NAME)



IC ICM H05B033-26

INCL 428690000; 428917000; 428212000; 428332000; 313504000; 313506000;
313503000; 313113000; 257098000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT Alloys, uses

RL: DEV (Device component use); USES (Uses)
(anode; **organic light emitting** device reflective bilayer anode structure having improved stability)

IT Anodes

Electroluminescent devices
(**organic light emitting** device reflective bilayer anode structure having improved stability)

IT Aluminum alloy, base
Chromium alloy, base
Cobalt alloy, base
Copper alloy, base
Gold alloy, base
Iridium alloy, base
Magnesium alloy, base
Molybdenum alloy, base
Nickel alloy, base
Palladium alloy, base
Platinum alloy, base

Rhodium alloy, base
 Silver alloy, base
 Tellurium alloy, base
 Zinc alloy, base
 RL: DEV (Device component use); USES (Uses)
 (reflective anode; **organic light emitting**
 device reflective bilayer anode structure having improved
 stability)

IT 12677-39-3
 RL: DEV (Device component use); USES (Uses)
 (anode skin **layer; organic light**
emitting device reflective bilayer anode structure
 having improved stability)

IT 864912-87-8
 RL: DEV (Device component use); USES (Uses)
 (cathode **layer; organic light**
emitting device reflective bilayer anode structure
 having improved stability)

IT 147-14-8, Copper phthalocyanine 7446-07-3, Tellurium oxide
 (TeO₂) 7631-86-9, Silica, uses 11098-99-0, Molybdenum oxide
 11099-11-9, Vanadium oxide 12036-32-7, Praseodymium oxide
 (Pr₂O₃) 50926-11-9, Indium tin oxide 51311-17-2, Carbon
 fluoride 117944-65-7, IZO
 RL: DEV (Device component use); USES (Uses)
 (hole injection structure; **organic light**
emitting device reflective bilayer anode structure
 having improved stability)

IT 7789-24-4, Lithium fluoride (LiF), uses
 RL: DEV (Device component use); USES (Uses)
 (**organic light emitting** device reflective
 bilayer anode structure having improved stability)

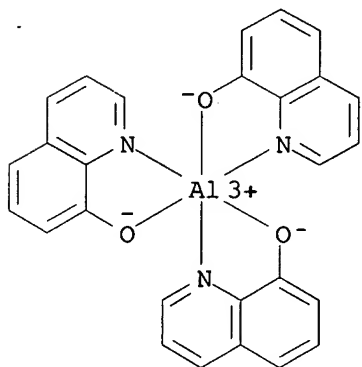
IT 131437-99-5 864912-88-9
 RL: DEV (Device component use); USES (Uses)
 (reflective anode skin **layer; organic**
light emitting device reflective bilayer
 anode structure having improved stability)

IT 409-21-2, Silicon carbide (SiC), uses 1299-86-1, Aluminum
 carbide (Al₄C₃) 1309-48-4, Magnesium oxide (MgO), uses
 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconium oxide
 (ZrO₂), uses 1344-28-1, Alumina, uses **2085-33-8**, Alq₃
 12033-89-5, Silicon nitride, uses 13463-67-7, Titanium oxide
 (TiO₂), uses 18282-10-5, Tin oxide (SnO₂) 24304-00-5, Aluminum
 nitride (AlN) 25583-20-4, Titanium nitride (TiN) 123847-85-8,
 NPB
 RL: DEV (Device component use); USES (Uses)
 (transmission enhancement **layer; organic**
light emitting device reflective bilayer
 anode structure having improved stability)

L132 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 2005:444143 Document No. 143:142286 Color tunable metal-cavity
organic light-emitting diodes with
 fullerene **layer**. Han, Sijin; Huang, Changjun; Lu,
 Zheng-Hong (Department of Materials Science and Engineering,
 University of Toronto, Toronto, ON, M5S 3E4, Can.). Journal of
 Applied Physics, 97(9), 093102/1-093102/5 (English) 2005. CODEN:

JAPIAU. ISSN: 0021-8979. Publisher: American Institute of Physics.

- AB Three primary colors, red, green, and blue have been obtained from a **single-emission layer org** . **light-emitting diode (OLED)** through optical design using a half-wavelength all-metal-cavity device. Fullerene is used as an electron transport layer to further enhance the elec. performance of the cavity device and the optical tuning of the cavity **OLED**. This fullerene layer results in a .apprx.2 V driving voltage reduction and a .apprx.20% increase in power efficiency, as compared with traditional cavity **OLED** with Alq as the electron transport layer. The emissive spectra for the cavity **OLEDs** are well predicted by the Fabry-Perot cavity theory. The spectral narrowing and intensity enhancement at the resonance wavelength have been observed and are explained by the redistribution of optical-mode d. inside the microcavity. Schemes to tune the emissive color by varying the cavity length through variations of indium tin oxide thickness, hole transport layer thickness, and electron transport thickness, individually or collectively, have been proposed and demonstrated.
- IT 2085-33-8, Alq3
RL: DEV (Device component use); USES (Uses)
(color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- RN 2085-33-8 HCAPLUS
- CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (9CI) (CA INDEX NAME)



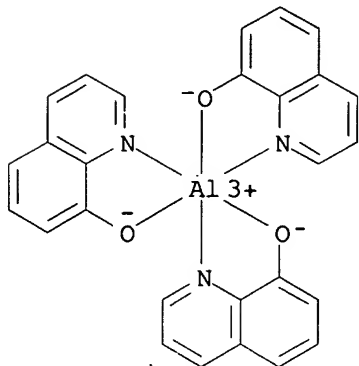
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
- ST org LED fullerene electron transporting
electroluminescence luminance voltage
- IT **Electroluminescent devices**
Luminescence, electroluminescence
(color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- IT Optical resonators
(silver mirror; color tunable metal-cavity **organic**

- light-emitting diodes with fullerene layer)
- IT 7440-22-4, Silver, uses
RL: DEV (Device component use); USES (Uses)
(anode mirror; color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); USES (Uses)
(anode; color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- IT 2085-33-8, Alq3 123847-85-8, NPB
RL: DEV (Device component use); USES (Uses)
(color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- IT 99685-96-8, Fullerene
RL: DEV (Device component use); USES (Uses)
(electron transporting layer; color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- IT 65181-78-4, TPD
RL: DEV (Device component use); USES (Uses)
(hole transporting layer; color tunable metal-cavity **organic light-emitting diodes with fullerene layer**)
- L132 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
2005:251136 Document No. 143:123523 Field distribution and criterion for bulk-limited and injection-limited current conduction in **single layer organic light-emitting devices**. Peng, Y. Q.; Yang, J. H. (School of Physical Science and Technology, Lanzhou University, Lanzhou, 730000, UK). Applied Physics A: Materials Science & Processing, A80(7), 1511-1516 (English) 2005. CODEN: APAMFC. ISSN: 0947-8396. Publisher: Springer GmbH.
- AB A numerical model for current conduction in **single layer OLEDs** including both injection and bulk effect is proposed. Based upon this model, a nearly linear distribution of the elec. field was found, and the slope of the distribution, or the field at the injection electrode (F_0) is dependent on the energy barrier, mobility, trap d. and trap depth. F_0 is the half of the mean field of the device (F_m), which is the quotient of the bias to the thickness of organic layer, is proposed as the limit for bulk-limited (BL) and injection-limited (IL) conduction. **OLEDs** with F_0 greater than $F_m/2$ are considered as IL-conducting, while those with F_0 less than $F_m/2$ are considered as BL-conducting. The state of current conduction is not only determined by the energy barrier at the injection electrode, but also by the mobility, trap d. and trap depth of the organic semiconductor. **OLEDs** with high injection barrier (>0.7 eV), trap d. $<10^{19}$ cm $^{-3}$, and reduced trap depth shallower than 5, will be IL-conducting, while those with low energy barrier (<0.2 eV), low carrier mobility ($<10^{-6}$ cm 2 /Vs), and trap d. $>10^{17}$ cm $^{-3}$, will be BL-conducting.
- IT 2085-33-8, Tris(8-hydroxyquinoline) aluminum
RL: DEV (Device component use); USES (Uses)

(organic layer, numerical results for field distribution and criterion of injection-limited and bulk-limited current conduction in **single layer organic light-emitting** devices)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato- κ N1, κ O8)- (9CI) (CA INDEX NAME)



CC 76-1 (Electric Phenomena)

Section cross-reference(s): 73

ST org **electroluminescent** device current conduction field distribution

IT Electron mobility

Potential barrier

Trapping

(field distribution and determination of current conduction by energy barrier, mobility, trap d., trap depth of **single layer organic light-emitting** devices)

IT Electric current-potential relationship

(of device, numerical results for field distribution and criterion of injection-limited and bulk-limited current conduction in **single layer organic light-emitting** devices)

IT **Electroluminescent** devices

(organic; field distribution and determination of current conduction by energy barrier, mobility, trap d., trap depth of **single layer organic light-emitting** devices)

IT 2085-33-8, Tris(8-hydroxyquinoline) aluminum

RL: DEV (Device component use); USES (Uses)

(organic layer, numerical results for field distribution and criterion of injection-limited and bulk-limited current conduction in **single layer organic light-emitting** devices)

L132 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

2005:160521 Document No. 142:228488 Reconfigurable organic

light-emitting device and display apparatus

employing the same. Wu, Chung-Chih; Chen, Chieh-Wei; Cho, Ting-Yi

(Taiwan). U.S. Pat. Appl. Publ. US 2005040392 A1 20050224, 44 pp.
(English). CODEN: USXXCO. APPLICATION: US 2003-642745 20030819.

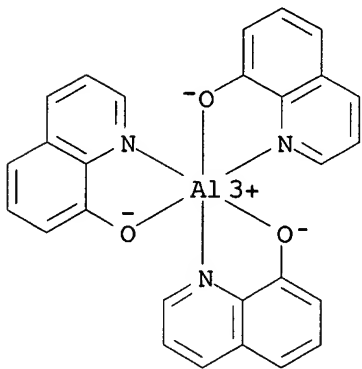
AB A reconfigurable organic **light-emitting** device and the display apparatus employing such organic **light-emitting** device, wherein the reconfigurable organic **light-emitting** device comprises at least two **organic light-emitting layers** and at least one high-energy-gap carrier-blocking layer. The at least one high-energy-gap carrier-blocking layer is formed between each of the **organic light-emitting layers**. The structure of the reconfigurable organic **light-emitting** device can be reconfigured through heating, and the reconfigurable organic **light-emitting** device may thus **emit light** characteristic of **one layer** of the at least two **organic light-emitting layers**, after a bias voltage is applied on the upper electrode and the lower electrode of the reconfigurable organic **light-emitting** device. The heating may be performed with a built-in resistive heating source, an external heating source or a light-beam. By employing the reconfigurable organic **light-emitting** device, fixed-pattern, passive-matrix, and active-matrix display apparatus of multi-color or full-color may further be fabricated.

IT 2085-33-8, Alq3

RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(reconfigurable organic **light-emitting** device and display apparatus employing the same)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato- κ N1, κ O8) - (9CI) (CA INDEX NAME)



IC ICM H01L035-24

INCL 257040000

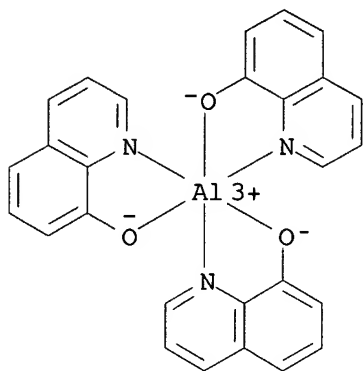
CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

ST reconfigurable org **light emitting** device

- display app
- IT **Electroluminescent** devices
(displays; reconfigurable **organic light-emitting** device and **display** apparatus employing the same)
- IT **Luminescent** screens
(**electroluminescent**; reconfigurable **organic light-emitting** device and **display** apparatus employing the same)
- IT Glass, properties
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(reconfigurable **organic light-emitting** device and display apparatus employing the same)
- IT **2085-33-8**, Alq3 4733-39-5, BCP 7429-90-5, Aluminum, properties 7440-47-3, Chromium, properties 7789-24-4, Lithium fluoride, properties 28210-41-5D, sulfonated 50926-11-9, Indium tin oxide 163359-60-2 292827-46-4 518997-91-6
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(reconfigurable **organic light-emitting** device and display apparatus employing the same)
- L132 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
2004:1028554 Document No. 142:186054 Electrophosphorescence **emission** in **organic light-emitting** diodes based on (Sm + Eu) complexes. Reyes, R.; Cremona, M.; Teotonio, E. E. S.; Brito, H. F.; Malta, O. L. (Departamento de Fisica, PUC-Rio, Pontificia Universidade Catolica de Rio de Janeiro, Rio de Janeiro, CEP 22453-970, Brazil). Thin Solid Films, 469-470, 59-64 (English) 2004. CODEN: THSFAP. ISSN: 0040-6090. Publisher: Elsevier B.V..
- AB In this work, we reported the preparation and the characterization of triple-layer **electroluminescent** organic devices using different blends of the samarium and europium β -diketonate complexes [SmxEu_y(TTA)₃(TPPO)₂] (x = 0.7, 0.9; y = 0.3, 0.1) as emitting layer. The **organic light-emitting** diode (OLED) devices contained 1-(3-methylphenyl)-1,2,3,4-tetrahydroquinoline-6-carboxyaldehyde-1,1'-diphenylhydrazone (MTCD) as hole-transporting layer and tris(8-hydroxyquinoline) aluminum (Alq3) as electron transporting layer. The **electroluminescence (EL)** spectra present emission narrow bands characteristic of the Sm³⁺ and Eu³⁺ ions overlapped with a broad band attributed to the mol. electrophosphorescence (EP) from the triplet-singlet (T₁→S₀) transition from the TTA ligand. The intensity ratio of the peaks is determined by the bias voltage applied to the OLED and this fact, together with the ligand electrophosphorescence, allows fabrication of a voltage-tunable color light source.
- IT **2085-33-8**, Alq3
RL: DEV (Device component use); USES (Uses)
(electron transporting layer; electrophosphorescence **emission** in **organic light-**

emitting diodes based on (Sm+Eu) complexes)
 RN 2085-33-8 HCAPLUS
 CN Aluminum, tris(8-quinolinolato- κ N1, κ O8)- (9CI) (CA
 INDEX NAME)

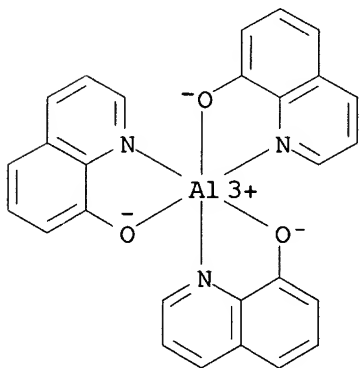


- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76
- IT **Electroluminescent devices**
 (electrophosphorescence **emission** in organic
light-emitting diodes based on (Sm+Eu)
 complexes)
- IT Electric current-potential relationship
Luminescence
Luminescence, electroluminescence
Phosphorescence
 UV and visible spectra
 (of samarium/europium complexes for **light-**
emitting devices)
- IT 2085-33-8, Alq3
 RL: DEV (Device component use); USES (Uses)
 (electron transporting **layer**; electrophosphorescence
emission in organic **light-**
emitting diodes based on (Sm+Eu) complexes)
- IT 326-91-0 791-28-6, Triphenylphosphine oxide 7440-19-9,
 Samarium, properties 7440-53-1, Europium, properties
 7440-54-2, Gadolinium, properties
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (emitting **layer**; electrophosphorescence
emission in organic **light-**
emitting diodes based on (Sm+Eu) complexes)
- IT 120482-15-7
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (hole-transporting **layer**; electrophosphorescence
emission in organic **light-**
emitting diodes based on (Sm+Eu) complexes)

L132 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:960124 Document No. 141:372620 Providing an emission-protecting
 layer in an OLED device. Liao, Liang-Sheng; Klubek,

Kevin P.; Comfort, Dustin L. (Eastman Kodak Company, USA). Eur. Pat. Appl. EP 1475850 A2 20041110, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR. (English). CODEN: EPXXDW. APPLICATION: EP 2004-76248 20040426. PRIORITY: US 2003-2003/431303 20030507.

- AB An organic **light-emitting** device with improved performance including an anode formed over a substrate; a hole-transporting layer formed over the anode; and a **light-emitting** layer formed over the hole-transporting layer for producing light in response to hole-electron recombination. The organic **light-emitting** device also includes an emission-protecting layer formed over the **light-emitting** layer, wherein the emission-protecting layer includes one or more materials selected to resist the surface contamination on the **organic light-emitting layer** and to ensure that there will be less surface contamination than if such layer had not been provided; an electron-transporting layer formed over the emission-protecting layer; and a cathode formed over the electron-transporting layer.
- IT 2085-33-8, Tris(8-quinolinolato)aluminum
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
 (providing emission-protecting layer in **OLED** device)
- RN 2085-33-8 HCAPLUS
- CN Aluminum, tris(8-quinolinolato-κN1,κO8) - (9CI) (CA INDEX NAME)



- IC ICM H01L051-20
- CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 74, 76
- ST emission protecting layer **OLED** device
- IT **Electroluminescent** devices
 (displays; providing emission-protecting layer in **OLED** device)
- IT **Luminescent** screens
 (electroluminescent; providing emission-protecting

layer in **OLED** device)

IT Fluoropolymers, properties
 RL: CPS (Chemical process); DEV (Device component use); PEP
 (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); PROC (Process); USES (Uses)
 (fluorocarbon; providing emission-protecting layer in
OLED device)

IT **Electroluminescent** devices
 (providing emission-protecting layer in **OLED** device)

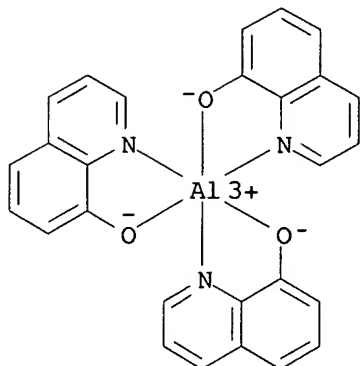
IT 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9,
 Indium tin oxide 123847-85-8, Npb 200052-70-6, DCJTB
 779342-93-7
 RL: CPS (Chemical process); DEV (Device component use); PEP
 (Physical, engineering or chemical process); PRP (Properties); PYP
 (Physical process); PROC (Process); USES (Uses)
 (providing emission-protecting layer in **OLED** device)

L132 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 2004:934667 Document No. 141:403265 **Organic**
electroluminescent device and **display**. Kuma,
 Hitoshi (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO
 2004095892 A1 20041104, 26 pp. DESIGNATED STATES: W: AE, AG, AL,
 AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,
 CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM,
 HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
 LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM,
 PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
 TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE,
 BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR,
 IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.
 (Japanese). CODEN: PIXXD2. APPLICATION: WO 2004-JP5762 20040422.
 PRIORITY: JP 2003-119305 20030424.

AB A highly efficient organic **EL** device having good
 field-of-view characteristics is disclosed. An organic
electroluminescent device comprises a transparent
 electrode and a counter electrode arranged opposite to the
 transparent electrode, and one or more intermediate conductive
 layers and one or more organic
light-emitting layers arranged between
 the transparent electrode and the counter electrode. When the
 refractive index of the intermediate conductive layer is na and
 the refractive index of the **organic light-**
emitting layer is nb, the difference between na
 and nb is 0.2 or less.

IT 2085-33-8, Alq3
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (**organic electroluminescent** device and
display)

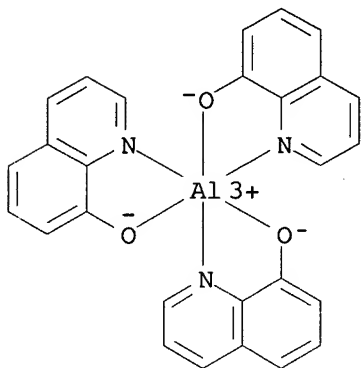
RN 2085-33-8 HCAPLUS
 CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (9CI) (CA
 INDEX NAME)



- IC ICM H05B033-26
ICS H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 74
- ST **org electroluminescent device display**
- IT **Electroluminescent devices**
Glass substrates
(**organic electroluminescent device and display**)
- IT 89114-74-9
RL: DEV (Device component use); MOA (Modifier or additive use);
PRP (Properties); USES (Uses)
(**organic electroluminescent device and display**)
- IT 1313-27-5, Molybdenum oxide (MoO₃), properties 1314-62-1,
Vanadium oxide (V₂O₅), properties 2085-33-8, Alq₃
7429-90-5, Aluminum, properties 7789-24-4, Lithium fluoride,
properties 23102-67-2 50926-11-9, ITO 124729-98-2, MTDATA
142289-08-5, DPVBi 279672-58-1 331965-27-6
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(**organic electroluminescent device and display**)
- L132 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
- 2004:733011 Document No. 141:403158 Highly efficient energy transfer
to a novel organic dye in **OLED** devices. Hepp, A.;
Ulrich, G.; Schmechel, R.; von Seggern, H.; Ziessel, R. (Institute
of Materials Science, Darmstadt University of Technology,
Darmstadt, Germany). Synthetic Metals, 146(1), 11-15 (English)
2004. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier B.V..
- AB The neutral 4,4-difluoro-8-(2,2':6',2''-terpyridine-4'-yl)-1,3,5,7-
tetramethyl-2,6-diethyl-4-bora-3a,4a-diaza-s-indacene (Boditerpy)
mol. was synthesized and incorporated as dopant (<1%) in
double-layer organic light emitting diodes (OLEDs) with the configuration
ITO/ α -NPD(60 nm)/Alq₃(60 nm):Boditerpy (0.4 nm)/LiF(0.02
nm)/Al(80 nm). This device exhibits green emission with a
brightness of 545 cd/m² at 8 V and a maximum power efficiency of 0.9
lm/W. A full quant. energy transfer process is indicated by a

complete quenching of **light emission** from Alq3 in photoluminescence. However, I-V characteristics indicate some losses during the charge transfer processes in **OLED** configuration.

- IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (efficient energy transfer to novel organic dye in **OLED** devices)
 RN 2085-33-8 HCAPLUS
 CN Aluminum, tris(8-quinolinolato- κ N1, κ O8) - (9CI) (CA INDEX NAME)

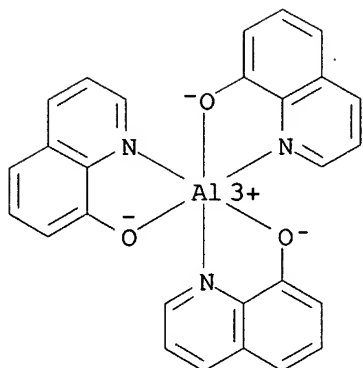


- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 22, 77
 ST energy transfer org dye **OLED** light emitting diode
 IT Electric current-potential relationship
 Electroluminescent devices
 Electron transfer
 Energy transfer
 Fluorescence
 Glass substrates
 Luminescence, electroluminescence
 Luminescence quenching
 NMR (nuclear magnetic resonance)
 UV and visible spectra
 (efficient energy transfer to novel organic dye in **OLED** devices)
 IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses 50926-11-9, Indium tin oxide
 RL: DEV (Device component use); USES (Uses)
 (efficient energy transfer to novel organic dye in **OLED** devices)
 IT 613242-17-4, 4,4-Difluoro-8-(2,2':6',2''-terpyridine-4'-yl)-1,3,5,7-tetramethyl-2,6-diethyl-4-bora-3a,4a-diaza-s-indacene
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
 (efficient energy transfer to novel organic dye in **OLED** devices)

devices)
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
123847-85-8, α -NPD
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(efficient energy transfer to novel organic dye in OLED
devices)
IT 76-05-1, Trifluoroacetic acid, reactions 84-58-2, DDQ
517-22-6, Cryptopyrrole 108295-45-0, 4'-Formyl-2,2',6',2''-
terpyridine
RL: RCT (Reactant); RACT (Reactant or reagent)
(efficient energy transfer to novel organic dye in OLED
devices)
L132 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
2004:545725 Document No. 141:113816 Red light
emitting compounds for organic electroluminescent
devices and organic electroluminescent devices using
them. Tak, Yoon-heung; Han, Yoon-soo; Kim, Yong-kwan; Kim,
Ki-dong; Kim, Sang-dae (Lg Electronics Inc., S. Korea). Eur. Pat.
Appl. EP 1435384 A2 20040707, 18 pp. DESIGNATED STATES: R: AT,
BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE,
SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK.
(English). CODEN: EPXXDW. APPLICATION: EP 2003-29660 20031223.
PRIORITY: KR 2002-86819 20021230.
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB A red color emitting compds. is described wherein the compds. is
represented by R1-CH=CH-X-CH=CH-R2 wherein, X is represented by I
or II, and R1, R2 and R3 each are represented by general formula
III, IV, V, and VI, wherein R4-R9 each are independently a
hydrogen atom, a halogen group, a (un)substituted alkoxy group, a
(un)substituted alkyl group, or a (un)substituted allyl group. An
OLED having one or more organic thin layers formed between a
first and a second electrode wherein at least any one
layer of the organic thin layers comprises
one or more the red color emitting compds. is also
described.
IT 2085-33-8, Alq3
RL: DEV (Device component use); USES (Uses)
(emitting layer; red light
emitting compds. for organic
electroluminescent devices and organic
electroluminescent devices using them)
RN 2085-33-8 HCAPLUS
CN Aluminum, tris(8-quinolinolato- κ N1, κ O8)- (9CI) (CA
INDEX NAME)



- IC ICM C09K011-06
ICS H05B033-14; H01L051-20; C07C255-51; C07D209-86; C07D265-38;
C07D279-28; C07D279-32
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 25, 76
- ST red light emitting material org
electroluminescent device
- IT Luminescent substances
(electroluminescent; red light
emitting compds. for organic electroluminescent
devices and organic electroluminescent devices using
them)
- IT Electroluminescent devices
(red light emitting compds. for organic
electroluminescent devices and organic
electroluminescent devices using them)
- IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses
RL: DEV (Device component use); USES (Uses)
(cathode; red light emitting compds. for
organic electroluminescent devices and organic
electroluminescent devices using them)
- IT 356775-66-1 718643-09-5 718643-11-9 718643-15-3
718643-16-4 718643-20-0 718643-22-2 718643-25-5
718643-27-7 718643-29-9 718643-30-2 718643-32-4
718643-33-5 718643-35-7 718643-37-9 718643-39-1
718643-40-4
RL: DEV (Device component use); USES (Uses)
(emission layer; red light
emitting compds. for organic
electroluminescent devices and organic
electroluminescent devices using them)
- IT 208263-43-8P 718643-41-5P
RL: DEV (Device component use); MOA (Modifier or additive use);
SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(emission layer; red light
emitting compds. for organic
electroluminescent devices and organic
electroluminescent devices using them)
- IT 718643-07-3P 718643-13-1P 718643-18-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(emitting layer; red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

IT 2085-33-8, Alq3
RL: DEV (Device component use); USES (Uses)
(emitting layer; red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

IT 147-14-8, Copper phthalocyanine
RL: DEV (Device component use); USES (Uses)
(hole injection layer; red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

IT 123847-85-8, NPD
RL: DEV (Device component use); USES (Uses)
(hole transport layer; red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

IT 116-52-9
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(red emitting layer; red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

IT 39095-25-5P, 2,5-Dimethyl-terephthalonitrile
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them).

IT 68-12-2, Dimethylformamide, reactions 75-09-2, Dichloromethane, reactions 78-40-0 106-38-7, 1-Bromo-4-methyl-benzene 108-44-1, reactions 108-67-8, 1,3,5-Trimethylbenzene, reactions 108-88-3, Toluene, reactions 122-52-1, Triethylphosphite 544-92-3, Copper cyanide (CuCN) 1074-24-4, 2,5-Dibromo-p-xylene 4181-05-9 5104-27-8 7726-95-6, Bromine, reactions 10025-87-3, Phosphorus chloride oxide (PCl3O) 87220-68-6 101097-26-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

IT 608-72-0P 1206-85-5P 64746-04-9P 117597-62-3P 356775-62-7P 685519-95-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(red light emitting compds. for organic electroluminescent devices and organic electroluminescent devices using them)

L132 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

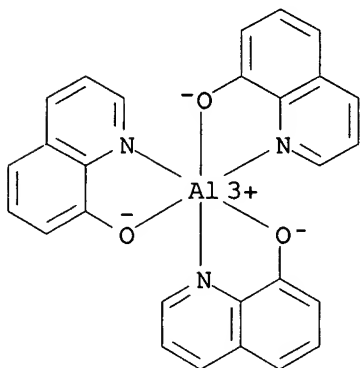
2003:678334 Document No. 139:221368 Organic **light-emitting** diodes employing silyl-substituted amine molecular component as hole-injection layer, and methods for enhancing charge injection. Marks, Tobin J.; Huang, Qinglan; Cui, Ji; Veinot, Jonathan (Northwestern University, USA). U.S. Pat. Appl. Publ. US 2003162053 A1 20030828, 30 pp., Cont.-in-part of U.S. Ser. No. 187,891. (English). CODEN: USXXCO. APPLICATION: US 2002-99131 20020315. PRIORITY: US 1996-673600 19960625; US 1998-187891 19981106.

AB Methods of using an amine mol. component to enhance hole injection across the electrode-organic interface of a **light-emitting** diode are discussed which entail providing an anode; and incorporating an **electroluminescent** medium adjacent the anode, the medium comprising an amine mol. layer, coupled to the anode and having ≥ 1 of an arylamine mol. component and an arylalkyl-amine mol. component, each component substituted with ≥ 1 silyl group, and on the mol. layer a hole transport layer of mol. components having the amine structure. **Electroluminescent** devices for generating light upon application of an elec. potential across two electrodes are described which comprise an anode; .gtoreq.1 amine mol. layer, coupled to the anode and having ≥ 1 of an arylamine mol. component and an arylalkyl-amine mol. component, each component substituted with ≥ 1 silyl group; a conductive layer of mol. components having the amine structure; and a cathode in elec. contact with the anode layer.

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (organic **light-emitting** diodes employing
 silyl-substituted amine mol. component as hole-injection layer,
 and methods for enhancing charge injection)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato- κ N1, κ O8) - (9CI) (CA
 INDEX NAME)



IC ICM H05B033-00

INCL 428690000; 428917000; 428447000; 428448000; 428450000; 313504000;
 313506000; 427066000; 257040000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76

ST **electroluminescent** device silyl substituted amine hole injection **OLED**

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(aralkyl, silyl-substituted; **organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(aromatic, silyl-substituted; **organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT Hole transport
(hole injection enhancement; **organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT **Electroluminescent** devices
(**organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT Amines, uses
RL: DEV (Device component use); USES (Uses)
(**organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(anode; **organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT 65181-78-4D, TPD, alkylsilyl-substituted
RL: DEV (Device component use); USES (Uses)
(hole-injection **layer**; **organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT 65181-78-4, TPD
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hole-transporting **layer**; **organic light-emitting** diodes employing silyl-substituted amine mol. component as hole-injection layer, and methods for enhancing charge injection)

IT 201487-45-8P 433211-60-0P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**organic light-emitting** diodes employing amine mol. component as hole-transporting layer)

IT 201487-44-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)
(organic **light-emitting** diodes employing amine
mol. component as hole-transporting layer)
IT 249920-78-3P 344782-48-5P 446874-82-4P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);
PREP (Preparation); RACT (Reactant or reagent)
(organic **light-emitting** diodes employing amine
mol. component as hole-transporting layer prepared using)
IT 75-21-8, Ethylene oxide, reactions 98-59-9, Tosyl chloride
106-37-6, 1,4-Dibromobenzene 106-95-6, Allyl bromide, reactions
531-91-9, N,N'-Diphenylbenzidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(organic **light-emitting** diodes employing amine
mol. component as hole-transporting layer prepared using)
IT 201487-41-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(organic **light-emitting** diodes employing
silanated amine mol. component as hole-transporting layer)
IT 4316-58-9, Tris(4-bromophenyl)amine 10026-04-7, Silicon
tetrachloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(organic **light-emitting** diodes employing
silanated amine mol. component as hole-transporting layer
prepared using)
IT 33170-68-2P 55368-74-6P, 3,5-Bis(4-bromophenyl)isoxazole
201487-42-5P 201487-43-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(organic **light-emitting** diodes employing
silanated electron-transporting layer)
IT 99-90-1 619-42-1 5470-11-1 10025-78-2, Trichlorosilane
24850-33-7, Tributylallyltin
RL: RCT (Reactant); RACT (Reactant or reagent)
(organic **light-emitting** diodes employing
silanated electron-transporting layer prepared using)
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
239083-35-3 239083-35-3D, alkylsilyl-substituted 446874-83-5
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(organic **light-emitting** diodes employing
silyl-substituted amine mol. component as hole-injection layer,
and methods for enhancing charge injection)
IT 147-14-8, Copper phthalocyanine
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(reference hole-injection layer; organic
light-emitting diodes employing
silyl-substituted amine mol. component as hole-injection layer,
and methods for enhancing charge injection)
IT 31323-44-1D, hydrolyzed and cross-linked product
RL: CPS (Chemical process); DEV (Device component use); PEP
(Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process); USES (Uses)
(self-assembled capping material; organic **light-**
emitting diodes employing amine mol. component as
hole-transporting layer prepared using)

L132 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

2003:551786 Document No. 139:124823 Organic light-

emitting devices employing dibenzoquinoxaline derivatives.

Li, Xiao-chang Charles; Hsieh, Bing R. (Canon Kabushiki Kaisha, Japan). PCT Int. Appl. WO 2003058667 A1 20030717, 54 pp.

DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.

(English). CODEN: PIXXD2. APPLICATION: WO 2002-US41772 20021231.

PRIORITY: US 2001-2001/29671 20011231.

AB Organic **light-emitting** devices are described

which comprise an anode, a cathode, and .gtoreq.1

layer positioned between the anode and the cathode which

layer comprises .gtoreq.1 dibenzoquinoxaline

compound The preparation, electron transport properties and device characteristics of dibenzoquinoxaline compds. were demonstrated, where the dibenzoquinoxaline compds. include dipyridyl substituted dibenzoquinoxaline compds., di-Ph substituted dibenzoquinoxaline compds., naphthalene substituted dibenzoquinoxaline compds., anthracene-dibenzoquinoxaline compds., bis(methoxy)phenyl substituted dibenzoquinoxaline compds., dithiophen-dibenzoquinoxaline compds., and dibenzoquinoxaline compds.

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)

RL: DEV (Device component use); USES (Uses)

(**emitting layer; organic**

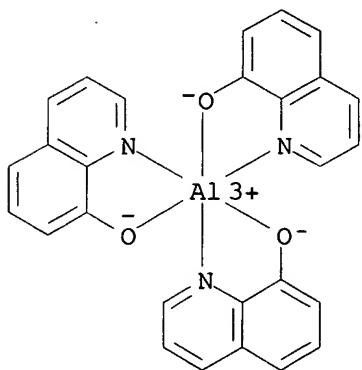
light-emitting devices employing

dibenzoquinoxaline derivs.)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (9CI) (CA

INDEX NAME)



IC ICM H01J001-62

ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 22, 28, 72, 76

ST org **electroluminescent** device dibenzoquinoxaline
derivate electron transport **OLED**

IT Electron transport
(materials; organic **light-emitting** devices
employing dibenzoquinoxaline derivs. as electron-transporting
materials)

IT **Electroluminescent** devices
(organic **light-emitting** devices employing
dibenzoquinoxaline derivs.)

IT 94928-86-6, fac-Tris(2-phenylpyridine)iridium
RL: DEV (Device component use); MOA (Modifier or additive use);
USES (Uses)
(4'-N,N'-dicarbazole-biphenyl doped with; organic **light-**
emitting devices employing dibenzoquinoxaline derivs.)

IT 58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl
RL: DEV (Device component use); USES (Uses)
(Ir(ppy)₃-doped; organic **light-emitting**
devices employing dibenzoquinoxaline derivs.)

IT 17401-76-2P 103307-09-1P
RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PRP (Properties); PYP (Physical process); SPN
(Synthetic preparation); PREP (Preparation); PROC (Process); USES
(Uses)
(electron-transporting **layer**; organic
light-emitting devices employing
dibenzoquinoxaline derivs.)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
RL: DEV (Device component use); USES (Uses)
(**emitting layer**; organic
light-emitting devices employing
dibenzoquinoxaline derivs.)

IT 4733-39-5, 2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline
RL: DEV (Device component use); USES (Uses)
(exciton **layer**; organic **light-**
emitting devices employing dibenzoquinoxaline derivs.)

IT 123847-85-8, α -NPD
RL: DEV (Device component use); USES (Uses)
(hole-transporting **layer**; organic
light-emitting devices employing
dibenzoquinoxaline derivs.)

IT 238-01-7, Acenaphtho[1,2-b]dibenzo[f,h]quinoxaline 24724-96-7
562105-86-6
RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PRP (Properties); PYP (Physical process); PROC
(Process); USES (Uses)
(organic **light-emitting** devices employing
dibenzoquinoxaline derivs.)

IT 215-14-5P, Phenanthrazine 562105-85-5P
RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PRP (Properties); PYP (Physical process); SPN
(Synthetic preparation); PREP (Preparation); PROC (Process); USES
(Uses)
(organic **light-emitting** devices employing
dibenzoquinoxaline derivs.)

IT 82-86-0, 1,2-Acenaphthylenedione 134-81-6 492-73-9

6373-11-1, 1,2-Aceanthrylenedione 53348-04-2,
9,10-Phenanthrenediamine

RL: RCT (Reactant); RACT (Reactant or reagent)
(organic light-emitting devices employing
dibenzoquinoxaline derivs. prepared using)

L132 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

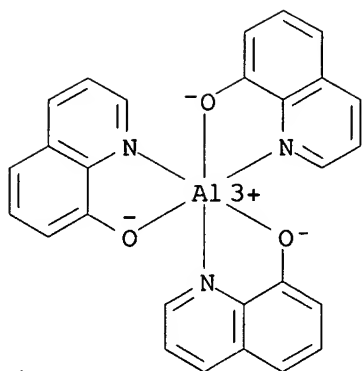
2003:413924 Document No. 139:14700 White-light-
emitting organic electroluminescent devices able
to directly emit continuous full color light containing three
different frequency bands and methods for fabricating the devices.
Lin, Ming-Der; Lin, San Bao; Chuang, Feng-Ju (Opto Tech Corp.,
Taiwan). U.S. Pat. Appl. Publ. US 2003099860 A1 20030529, 10 pp.
(English). CODEN: USXXCO. APPLICATION: US 2001-993682 20011127.

AB White-light-emitting organic
electroluminescent devices are described which comprise a
substrate; an anode formed on the substrate; .gtoreq.1
hole-transporting layer formed on the anode; \geq
1 **luminescent layer** formed on the
hole-transporting layer, where a first dopant is doped into the
luminescent layer; .gtoreq.1
electron-transporting layer formed on the
luminescent layer, where a second dopant is doped into the
electron-transporting layer; and a cathode formed on the
electron-transporting layer; where a first light is
emitted by the first dopant, a second light is
emitted by the second dopant, and a third light
is **emitted** by the **luminescent layer** when the
device is applied with a bias voltage. Methods for fabricating
the white-light-emitting organic
electroluminescent devices are discussed which entail
providing a substrate; forming, in sequence from substrate up, an
anode, .gtoreq.1 hole-transporting layer,
.gtoreq.1 **luminescent layer**,
.gtoreq.1 electron-transporting layer, and a
cathode; doping a first dopant into the **luminescent**
layer; and doping a second dopant into the electron-transporting
layer; where a first light is **emitted** by the
first dopant, a second light is **emitted** by the
second dopant, and a third light is **emitted** by
the **luminescent layer** when the device is applied with a
bias voltage.

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PRP (Properties); PYP (Physical process); PROC
(Process); USES (Uses)
(electron-transporting layer; white-light-
emitting organic electroluminescent
devices able to directly emit continuous full color light
containing three different frequency bands and methods for
fabricating the devices)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato- κ N1, κ O8)- (9CI) (CA
INDEX NAME)



IC ICM H05B033-14
ICS H05B033-10
INCL 428690000; 428917000; 428212000; 313504000; 313506000; 427066000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76
ST white org **electroluminescent** device fabrication
OLED
IT **Luminescent** substances
Phosphorescent substances
(dopant; white-light-emitting organic **electroluminescent** devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
IT **Electroluminescent** devices
(white-emitting; white-light-emitting organic **electroluminescent** devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
IT Electronic device fabrication
(white-light-emitting organic **electroluminescent** devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
IT 198-55-0, Perylene 51325-91-8, DCM1 155306-71-1, Coumarin 545T 200052-70-6, DCJTB
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(dopant; white-light-emitting organic **electroluminescent** devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(electron-transporting layer; white-light-emitting organic **electroluminescent** devices able to directly emit continuous full color light

- containing three different frequency bands and methods for fabricating the devices)
- IT 147-14-8, Copper phthalocyanine
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (hole-injection material; white-light-emitting organic electroluminescent devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
- IT 123847-85-8, N,N'-Bis(1-naphthyl)-N,N'diphenyl-1,1'-biphenyl-4-4'-diamine
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (hole-transporting layer; white-light-emitting organic electroluminescent devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
- IT 142289-08-5, DPVBi
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
 (luminescent material; white-light-emitting organic electroluminescent devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
- IT 25067-59-8, PVK 146162-54-1
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (luminescent material; white-light-emitting organic electroluminescent devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)
- IT 51325-95-2
 RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
 (red-emitting dopant; white-light-emitting organic electroluminescent devices able to directly emit continuous full color light containing three different frequency bands and methods for fabricating the devices)

L132 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 2003:16516 Document No. 138:311257 Bright single-active layer small-molecular organic light-emitting diodes with a polytetrafluoroethylene barrier.
 Gao, Yudi; Wang, Liduo; Zhang, Deqiang; Duan, Lian; Dong, Guifang; Qiu, Yong (Department of Chemistry, Organic Optoelectronics Lab, Tsinghua University, Beijing, 100084, Peop. Rep. China). Applied

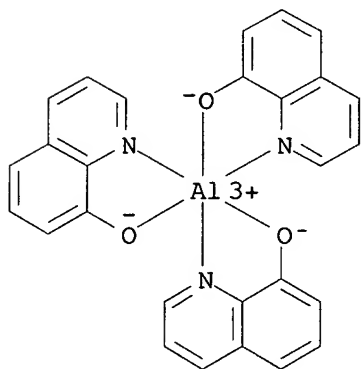
Physics Letters, 82(2), 155-157 (English) 2003. CODEN: APPLAB.
ISSN: 0003-6951. Publisher: American Institute of Physics.

AB **Single-layer organic light-emitting diodes (OLEDs)** with a small mol., tris(8-hydroxyquinoline) aluminum (Alq3) as the only active material, have been prepared. In order to achieve an efficient hole injection, a thin layer of polytetrafluoroethylene (Teflon) was inserted between the anode and the Alq3 layer. The effect of the Teflon layer thickness upon the device performance has also been investigated. A brightness of 16000 cd/m² with 6 nm thick Teflon layer was achieved, whereas the conventional double-layer **OLEDs** with N,N'-bis-(1-naphthyl)-N,N'-diphenyl-1,1'-biphenyl 4,4'-diamine and Alq3 showed only 9500 cd/m² in our expts. The **single-layer** structure technol. is of great importance to the **OLED's** commercialization due to its possible lower cost and higher production efficiency. And it is reasonable to infer that, based on this work, higher device performance could be realized by screening both the active material and the barrier layer material.

IT 2085-33-8, Alq3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(electron-transporting and emitting layer; bright **single-active layer** small-mol. **organic light-emitting diodes** with polytetrafluoroethylene barrier)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 38, 76

ST org **electroluminescent** device polytetrafluoroethylene barrier hole injection; **OLED** Teflon barrier thickness hole injection Alq3 **electroluminescence**

IT X-ray photoelectron spectra
(C 1s and F 1s spectra of Teflon layer; bright **single-active layer** small-mol. **organic**)

- light-emitting diodes with polytetrafluoroethylene barrier)
- IT Electric current-potential relationship (as function of Teflon layer thickness; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT Luminescence, electroluminescence (as function of voltage and Teflon layer thickness; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT Electroluminescent devices (bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT Fluoropolymers, properties
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(hole-injecting layer; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT Hole transport (injection, effect of Teflon layer on; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT Size effect
Thickness (thickness effect, of Teflon layer; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); USES (Uses)
(anode; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT 37271-44-6
RL: DEV (Device component use); USES (Uses)
(cathode; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT 2085-33-8, Alq3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(electron-transporting and emitting layer; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)
- IT 9002-84-0, Polytetrafluoroethylene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)

(hole-injecting layer; bright single-active layer small-mol. organic light-emitting diodes with polytetrafluoroethylene barrier)

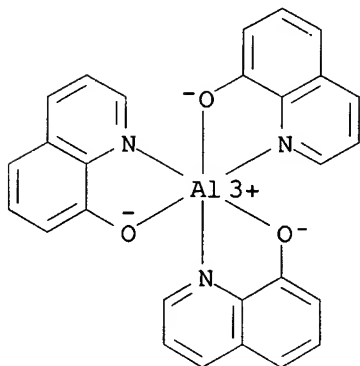
L132 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

2002:716802 Document No. 137:224279 Display panel having moisture proofing films. Saito, Keishi; Miyoshi, Sokichi; Nakano, Takashi (Pioneer Corporation, Japan). U.S. Pat. Appl. Publ. US 2002130615 A1 20020919, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-97593 20020315. PRIORITY: JP 2001-75524 20010316.

AB An organic electroluminescent display panel is described comprising a plurality of organic EL elements having a transparent electrode, at least one organic functional layer containing a light-emitting layer of organic compound and a metallic electrode, which are successively stacked, resp.; a front-surface moisture-proofing film which is kept in contact with the transparent electrode to carry the plurality of organic EL elements in plane; a rear-surface moisture-proofing film which is kept in contact with the metallic electrode to carry the plurality of organic EL elements in plane; and sealing layers which surround at least each of the organic functional layers so that they are individually distinct from one another.

IT 2085-33-8, AlQ3
RL: DEV (Device component use); USES (Uses)
(light emitting layer; display panel having moisture proofing films)

RN 2085-33-8 HCAPLUS
CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (9CI) (CA INDEX NAME)



IC ICM H05B033-00

INCL 313506000

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST display panel org electroluminescent

IT Electroluminescent devices

(displays; display panel having moisture proofing films)

IT Luminescent screens

(electroluminescent; display panel having moisture proofing films)

IT 2085-33-8, AlQ3

RL: DEV (Device component use); USES (Uses)
(light emitting layer; display panel having moisture proofing films)

L132 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

2000:827424 Document No. 134:200194 Organic polymer thick film

light emitting diodes (PTF-OLED).

Leung, L. M.; Kwong, C. F.; Kwok, C. C.; So, S. K. (Department of Chemistry, Hong Kong Baptist University, Hong Kong SAR, Kowloon, Kowloon Tong, Peop. Rep. China). Displays, 21(5), 199-201 (English) 2000. CODEN: DISDPD. ISSN: 0141-9382. Publisher: Elsevier Science B.V..

AB A guest-host approach was used to fabricate a 1-

layer organic light emitting

diode (OLED). The thick film ink approach allows the

2-dimensional OLED to be processed using traditional

methods such as silk-screen printing. The I-V-L characteristics

of the polymer thick film (PTF)-OLED were studied as a

function of the device chemical compns. and phys. configurations.

Different polymers, hole and electron transporters, and emitters

at different weight ratios were studied for its composition dependence.

Device configuration also plays a significant role on its overall

performance. Dependence on film thickness, electrode type, and

the usage of addnl. charge injection layers were also studied.

The simplified 1-layer device allows a

straightforward interpretation for the charge-transport and

recombination phenomena which shed light for its future

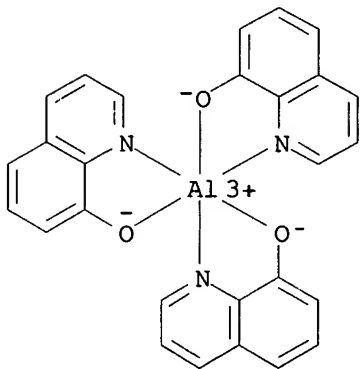
improvement.

IT 2085-33-8, AlQ3

RL: DEV (Device component use); USES (Uses)
(organic polymer film light emitting diodes containing)

RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
 Section cross-reference(s): 38, 76

ST **light emitting** diode current voltage film
 thickness

IT Thickness
 (film thickness vs. **luminosity** of **organic**
 polymer film **light emitting** diodes)

IT Electric current-potential relationship
Electroluminescent devices
 (organic polymer film **light emitting** diodes)

IT 2085-33-8, AlQ3 25067-59-8, PVK 65181-78-4, TPD
 RL: DEV (Device component use); USES (Uses)
 (organic polymer film **light emitting** diodes
 containing)

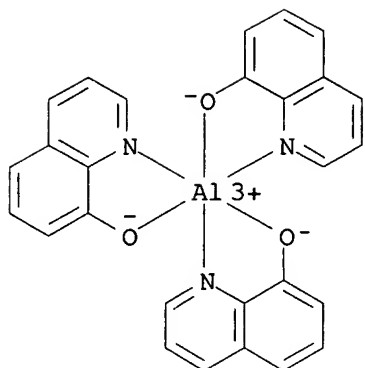
L132 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 2000:739330 Document No. 134:138592 Physics of organic alloy
light-emitting diodes. Shen, Jun; Choong,
 Vi-En; Yang, Jie; Shi, Song; So, Franky (Department of Electrical
 Engineering and Center for Solid State Electronics Research,
 Arizona State University, Tempe, AZ, 85287, USA). Proceedings of
 SPIE-The International Society for Optical Engineering,
 3939(Organic Photonic Materials and Devices II), 181-188 (English)
 2000. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The
 International Society for Optical Engineering.

AB Theor. models and exptl. results on the carrier transport
 mechanisms in **single-layer organic**
 alloy **light emitting** diodes are presented.
 The typical organic alloy consists of a mixture of electron and hole
 transporting materials. The device shows significant improvement
 in lifetime at room and elevated temps. The improvement is
 attributed to the elimination of the heterointerface and the
 minimization of the formation of unstable tris-(8-
 hydroxyquinoline) aluminum (Alq3) cations. The efficiency is
 comparable to those of their heterojunction counterparts.
 Balanced bipolar carrier injection and transport are made possible
 by adjusting the alloy composition and doping. The authors model the
 device by assigning individual conduction channels to each type of
 material. The sensitivity of the diode efficiency on several key
 parameters is studied.

IT 2085-33-8, Alq3
 RL: DEV (Device component use); PEP (Physical, engineering or
 chemical process); PROC (Process); USES (Uses)
 (electron-transporting and emitting material; mixture
single-layer light-emitting
 diode containing Alq3 and NPB)

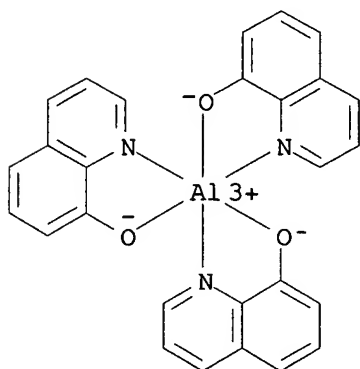
RN 2085-33-8 HCAPLUS

CN Aluminum, tris(8-quinolinolato- κ N1, κ O8)- (9CI) (CA
 INDEX NAME)



- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
- ST org **light emitting diode** carrier transport
model; **OLED** electron hole transport
electroluminescence
- IT HOMO (molecular orbital)
LUMO (molecular orbital)
(carrier mobility and recombination processes in HOMO and LUMO orbitals of NPB and Alq3 mixed-layer **light-emitting diode**)
- IT Electron-hole recombination
(carrier transport and recombination processes in org . mixed-layer **light-emitting diode** and effect of mixture composition on)
- IT Electric current-potential relationship
(current-voltage, **luminance**-voltage and efficiency-voltage characteristics of mixed-layer **OLED** and heterojunction **OLED**)
- IT **Luminescence, electroluminescence**
(in mixed-layer organic **light-emitting diode**)
- IT Solid-solid interface
(increase in operating lifetime of mixed-layer **OLED** compared with heterojunction **LED** due to elimination of heterojunction interface)
- IT **Electroluminescent devices**
(physics of mixed-layer organic **light-emitting diode**)
- IT Electric current carriers
(transport, and mobility; in mixed-layer org . **light-emitting diode**)
- IT Doping
(voltage, **luminance** and efficiency of mixed-layer organic **light-emitting diode** as function of doping coverage)
- IT 2085-33-8, Alq3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electron-transporting and emitting material; mixture

- single-layer light-emitting diode** containing Alq3 and NPB)
- IT 123847-85-8, NPB
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(hole-transporting material; mixture **single-layer light-emitting diode** containing Alq3 and NPB)
- L132 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
2000:377735 Document No. 133:65441 Electron injection into an Alq3 **single-layer organic light-emitting diode**. Barth, S.; Muller, P.; Riel, H.; Seidler, P. F.; Riess, W.; Vestweber, H.; Wolf, U.; Bassler, H. (IBM Research Division, Zurich Research Laboratory, Rueschlikon, CH-8803, Switz.). Synthetic Metals, 111-112, 327-330 (English) 2000. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..
- AB Elec. field and temperature-dependent electron injection studies were performed in an Al/tris(8-hydroxy-quinolinolato)aluminum (Alq3)/Mg:Ag **single-layer organic light-emitting diode (OLED)**. Semiconductor textbook theories, such as Fowler-Nordheim (FN) model for tunneling injection or Richardson-Schottky (RS) model for thermionic emission cannot account for the exptl. observed dependence of the injection current on elec. field and temperature. Excellent agreement with experiment is provided by a Monte Carlo simulation of carrier injection from a metal into an organic dielec. with random hopping sites.
- IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(electron injection into Alq3 **single-layer organic light-emitting diode**)
- RN 2085-33-8 HCAPLUS
CN Aluminum, tris(8-quinolinolato- κ N1, κ O8) - (9CI) (CA INDEX NAME)



- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

- ST electron injection aluminum hydroxyquinoline org LED;
light emitting diode thermionic emission carrier
injection
- IT Simulation and Modeling, physicochemical
(Monte Carlo; electron injection into Alq3 single-
layer organic light-emitting
diode)
- IT Electric current-potential relationship
Electroluminescent devices
Thermionic emission
Tunneling
(electron injection into Alq3 single-layer
organic light-emitting diode)
- IT Electric current carriers
(injection of; electron injection into Alq3 single-
layer organic light-emitting
diode)
- IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato)
7429-90-5, Aluminum, properties 37271-44-6
RL: DEV (Device component use); PEP (Physical, engineering or
chemical process); PRP (Properties); PROC (Process); USES (Uses)
(electron injection into Alq3 single-layer
organic light-emitting diode)

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